APPLIED DIETETICS

The Planning and Teaching of Normal and Therapeutic Diets

By

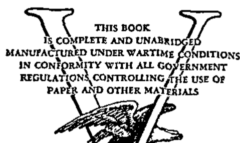
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To

ELEANOR SALTONSTALL

Whose faith in the Food Clinic throughout the years has helped beyond measure towards the fulfillment of this book

PREFACE TO THE FIRST EDITION

In 1918 a special clinic was organized as a part of the Medical Clinic of The Boston Dispensary, to undertake the dietetic treatment of the ambulatory patient This was the Food Clinic of The Boston Dispensary, the first of its kind functioning with a dietitian to guide and help the outpatient in fulfilling the food prescription given by the physician

A satisfactory technique had to be developed for this new type of service Principles of organization and methods of procedure had to be formulated, and relationships with other departments established Food treatment for the out patient had to be planned not only with respect to physical requirements as stated in the medical record but also with care ful consideration of mental capacity and attitudes, and of the influence of the environment—the home, the school and the occupation Means had to be devised for securing and recording data Moreover, for intelligent participation in making the dietary effective the patient had to be given an understanding of the underlying principles, and this entailed the development of educational methods and materials

In the interests of this many-sided service, various forms, materials and data were gradually assembled and organized for the use of both dietitian and patient The growth of the clinic and the increas ingly intensive work with the patient gradually effected a closer interdepen dence of the physician, social worker, nurse, dietitian and health educator, in a unified plan of treatment

Staff workers came to the Food Clinic for materials and advice Students came also, and gradually various schools and hospitals, in this country and abroad, were sending students, singly, in groups and in classes, from the fields of medicine, dentistry, home economics, applied diete tics, social service, nursing and public health, for periods of study, observation and practice The interest shown gave further impetus to the development of the material that the dietitian had been using for her own and her patients' needs and to its formulation in terms of the interests of various types of students

A group of dietitians from local medical institutions gathered in the Food Clinic several years ago, to discuss methods and materials for use in teaching applied dietetics The first drafts of some of the tables included in this book were revised by this group Mrs Quindara Oliver Dodge, Mrs Beula Becker Marble, Miss Mariza Moore Mrs Octavia Hall Smillie and Mrs Thelma Tubbs Currier The belief and encouragement of this group was an added stimulus to accomplish ment Since that time the Food Clinic has expanded the tables, added new ones and confirmed their practicability through use with patients and students

Thus the book can be pictured as having been in the process of development for many years

In 1920, the South End Diet Kitchen, founded in 1875 to provide "food for the sick poor," decided that it could best fulfill its purpose by contributing to the support of the Food Clinic, and to that end it eventually transferred its funds to The Boston Dispensary The directors, under the leadership of their president, Mrs Richard M Saltonstall, have always encouraged every development of theory, method and practice in the Food Clinic

There have been so many friends and helpers, both within and without the Food Clinic, that it would be impossible to mention all by name, and this opportunity is taken to express to them again, as if each were named, the thanks that have been given them by the spoken word Grateful recognition is given to past associates in the Food Clinic, for their various contributions to Miss Bertha Wood, who in the early years stated effectively in her book, "Food for the Foreign Born," principles that the Food Clinic, from its inception, has held to be fundamental, to Miss Gertrude T Spitz, whose devoted service to the Food Clinic movement has strengthened faith in it, helped to develop its philosophy and won for it many adherents, to Mrs Rachel Meserve Hoyt, who demonstrated the possibility of the education of the patient, to Mrs Jean Reyner Costigan, who collaborated in formulating the first drafts of the Dietary Outlines and Tables of Food Values and Measures, to Miss Charlotte Raymond, whose great interest in the field of applied dietetics has added much to the dissemination of knowledge of the customs and food habits of the foreign born, and to Miss Mabel Stimpson who, through a study of a group of children in the Children's Medical Clinic, demonstrated the importance of a careful consideration of food habits and environmental influences in medical treatment

To present associates in the Food Clinic, special appreciation is gratefully expressed to Miss Elizabeth Barden for admirable service rendered to patients, students and co workers, in testing and strengthening through years of practical application the theories and data that constitute this book, to Miss Helen Finkelstein, who correlated closely the dietetic treatment of the patient as given in the Food Clinic, in the Diagnostic Ward and in the pre-school Dental Clinic, in the interests of both student and patient, and to Miss Catharine Hazen, who demonstrated the value of educational methods with food allergy patients Grateful acknowledgement is given to Miss Mary Pfaffmann, the health educator of the staff, who developed methods and compiled materials for teaching children and mothers the relation of food to body needs, and who has rendered invaluable service in connection with the preparation and editing of this book, and to Miss Florence Goldman for her great care, intelligence and patience in typewriting the manuscript

Throughout the years, Dr Stuart B Foster, of the Department of Chemistry, State Teachers' College in Framingham, Massachusetts, has reviewed and verified the data contained in the Tables, and with his guidance the Foreword to the Tables was written His cooperation is deeply appreciated, and also that of Dr Hazel E Munsell, U S Department of Agriculture, Bureau of Home Economics, who kindly reviewed the data given in the vitamin chart

The section concerning the mental and emotional factors that influence the diet has been reviewed by Dr Augusta F Bronner, of the Judge Baker Child Guidance Center In demonstrating the interaction of the mental life and food habits, the Food Clinic has been encouraged by Dr Bronner's recognition of the importance of this relationship

The assistance of various physicians has been most valuable in formulating the medical data included in the text and the Dietary Outlines Co workers in the Department of Social Service of The Boston Dispensary have appreciated, from the pioneering days of the experi

ment, that the work of the Food Clinic is vitally related to their own service, and their understanding of social factors in relation to food has contributed much to the philosophy herein outlined

The book is the result of labor that is felt to be closely integrated with the aims and service of The Boston Dispensary as a whole Deep appreciation is expressed to the Director, Mr Frank E Wing, and also to Mr Michael M Davis, Director when the Food Clinic venture was begun, to the Administrative Staff and co workers in every department, for their constant encouragement and faith

Miss Dorothy B Hacker, valued associate in the Food Clinic for several years, gave, devotedly, time and labor to the first drafts of the material of this book, which counted as a long step toward the final accomplishment

1936 F S

PREFACE TO THE SECOND EDITION

Since the publication of the first edition of Applied Dietetics there has been accelerated research in nutrition and growing interest in applied dietetics with *an increase of the number of nutrition* courses For students, public health workers, teachers, nurses, social workers and physicians the author believes the new edition of Applied Dietetics will be of continued value

Perhaps outstanding in the newer knowledge of nutrition are the findings concerning the vitamins At the time of the first edition the vitamin values of foods were based primarily on biological experimentation inasmuch as the vitamins had not been isolated and their chemical composition was unknown To day the chemical structures of most of the vitamins are known and many foods have been analyzed for their content of these different chemical compounds Therefore the quantitative estimate that had previously been indicated by the plus sign is expressed in figures in the various tables and diets of the new edition With the exception of vitamin A and vitamin D the names of the vitamins are used as determined by their chemical composition While the book primarily gives consideration to food values, it indicates when medication will be necessary in certain diets where it is impossible to meet vitamin *requirements* Various foods are now enriched with vitamins and minerals and the figures for the food values of many of these are included

There is marked evidence of a desire on the part of both professional and lay *people for greater knowledge concerning* the vitamins, what they are, the amounts required, their effect on the body, where they can be obtained in food, and the amounts which the various foods supply Ways and means of teaching this information are contained in the chapters on *the education of the patient on the normal* and therapeutic diets and in the Dietary Outlines In this edition Dietary Outlines are given for conditions of vitamin deficiencies Lists of foods equivalent in vitamin values are included, and methods for conservation of vitamins

Research has contributed new scientific data with respect to the mineral values of foods, and there are new standards for the normal dietary This has involved some changes in the tables in the new edition The figures for the food values remain much the same but the diets have been re evaluated in terms of the latest requirements A table for potassium has been added in terms of average servings of some common foods arranged according to their potassium content

For students in medicine and allied fields there has also been much consideration of therapeutic diets, not the least among them the diabetic diet A new *chart on diets in diabetes shows the use* of the food constituents in relation to those of the normal diet, and variations in the diabetic diet according to the patient s weight

In the chapter on the education of the patient on the normal diet there are new illustrations These include an example of an especially helpful set of charts that record how each food constituent serves the body, the amounts needed per day *at various ages according to the latest* figures, and food sources by means of pictures of servings of foods with the

amount of the food constituent each serving contains

As in the previous edition there are many references to nationalities in the chapter on environmental factors, and a chart of food practices of some foreign peoples is included in the Tables This subject has become of increased importance through the studies made by the Committee on Food Habits of the National Research Council

The summaries in table form at the end of the book now have introductory remarks to give detailed information for their use in analysing and synthesizing the data given in the diets There are also added findings in the table of physiological data In the table of weights and measures more figures of the metric system are stated

It is believed that these changes will make the book more effective

I wish to thank the publishers for their continued faith in this method of teaching applied dietetics Also the many teachers and students in various fields for demonstrating in their work the value of the method described in this book Many suggestions have come from my associates still at the Boston Dispensary who contributed to the first edition Dr Joseph Rosenthal has been of special help on account of the close integration of the Food Clinic and the Diabetic Clinic of which he is chief The many physicians who send patients to the Food Clinic have given approval of the statements in their special fields particularly Dr Kathryn S Andrews, Dr Robert S Buck, Dr William Dameshek, Dr Samuel H Proger and Dr Siegfried J Thannhauser Dr Benjamin Alexander of the Harvard Medical School has read with meticulous care the part of the manuscript relating to the vitamins The new computations were assembled by Mrs Marie M Alexander and Mrs Mary L Craig Mrs Craig has worked constantly with the writer, and the second edition would not have been fulfilled without her devotion and help

1943 F S

INTRODUCTION

THE USE OF THE BOOK

The aim of this book is to present a procedure for planning and teaching normal and therapeutic diets The methods herein described are based on certain principles of nutrition that serve as guides in the construction and the use of diets for the needs of the individual patient, making it unnecessary to memorize formulas A fundamental principle is that food is composed of the same constituents as the body, and when taken into the body and broken down by physiological processes supplies the substances with which to build and repair tissue, provide energy and regulate the functioning of the different body parts The therapeutic diet is to be conceived of as a deviation from the normal diet With the realization of these principles, the normal diet is considered in relation to normal physiology whereas the therapeutic diet, considered in terms of pathological physiology, may call for an increase or decrease in the amount of a food constituent or the omission or change in consistency of a food or foods as used in the normal diet

Throughout the book the body requirements, in terms of the food constituents, are based on consideration of height weight age, sex and activity The diets are based on the requirements of a man weighing 70 kilograms although diets for the child and for pregnancy are also included Since the same individual, in terms of normal weight and activity, is considered throughout the book, it is possible to demonstrate clearly the relationship between the diets

Part I develops each step in the construction of normal and therapeutic diets in relation to body needs, and provides criteria for the selection of food constituents in right amounts, and the amounts and kinds of foods necessary to supply them

The effect of the relation of personality to food is emphasized in the chapter on *Environmental factors that influence the effectiveness of the diet*

Chapters on the education of the patient include material and methods helpful in teaching not only the principles of normal nutrition but also their application to the therapeutic diet These chapters discuss such matters as *Gaining the confidence and cooperation of the patient,* and *Conference with the patient* The chapter on the education of the patient on the therapeutic diet discusses further *The modification of the normal diet, Procedure in teaching the patient,* the *Application of the procedure to specific diseases*

Part II is a series of tables which may be used with or without the text to simplify the computation of the diet They will serve for reference and interpretation, much as do the tables on which the engineer relies For convenient reference they are listed in the table of contents by number and page

Part III comprises a series of Dietary Outlines, that are both complete and concise, for the dietary treatment of various diseases or abnormal conditions Each Dietary Outline considers the following factors *Body part affected, Physiology Pathological physiology or abnormal condition, Dietetic treatment Other contributing factors in dietetic treatment Food for the day Reason for the selection of the*

foods used in the special diet, Meals, Environmental factors that influence the effectiveness of the diet, Education of the patient, Abnormal conditions and diseases that may be found in association with the particular disease described

All these data are brought together at the beginning of Part III, in tabular form, to show the normal requirements of the food constituents, and their variation for the therapeutic diet Reading across the columns of this chart, one sees the amounts of the various food constituents needed per day for each disease or abnormal condition Reading down the columns the chart shows that only in certain diseases or conditions does the requirement of a food constituent deviate from the normal

In *Part IV* the normal and therapeutic diets are computed, to illustrate how the food prescription may be fulfilled, and the figures are starred when the amount is below the normal requirement Suggested meal plans and menus, of different cost, are given for each diet It is to be remembered that these diets are only illustrative, to teach the principles of applied dietetics The foods in the menus may be exchanged for foods of equivalent food values

At the end of the book summaries are given to bring the data together, in order that the principles and data on which the diets are based can be easily reviewed One of these summaries records the amounts of the food constituents required for the typical normal and therapeutic diets, to show any deviation of the therapeutic diet from the normal Another states the amounts of foods used in various therapeutic diets, making clear the changes from the normal amounts Still another chart supplies, in summarized form, the menus of normal and therapeutic diets previously set forth in detail, showing how closely the normal diet can be followed by the patient, using foods already present in the family diet

The material of the book has been arranged in its present form to be of value to workers in various fields of nutrition It will be helpful to the *physician* in the dietetic treatment of the patient, in the office and hospital as well as in the clinic The *social worker* will find it a means of increasing her understanding of the principles of diet therapy and of the influence of related environmental factors, and will be better able to help the patient to make the best possible social and economic adjustments to his diet To the *student* in home economics or applied dietetics already familiar with the principles of the science of nutrition, experience in applying these principles in the treatment of an individual patient in terms of his particular needs will render them vital The *teacher* and *public health worker*, deeply concerned in community health and serving as interpreters of scientific findings to the community, know the great need of teaching the relation of food to the body To them the book will be a helpful guide For instructors in nutrition it will be a help in organizing their courses The *nurse* realizes the importance of a knowledge of nutrition as a part of the general health program, and as a therapeutic measure, and will find here how to make practical application of this knowledge

All data upon which the book is based have been taken from the most recent and authoritative sources While all the information given can be found scattered among various books and journals, this compilation offers, in one place, as much as possible of the material useful for planning and teaching diets

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PART I

CHAPTER 1

THE DAILY FOOD REQUIREMENTS OF THE BODY

THE RELATION OF FOOD TO THE BODY

The body is a builder of its own substance and finds its materials in food. Food is composed of the same constituents as the body, and when taken into the body and broken down by physiological processes offers the substances with which to build and repair tissue, provide energy, and regulate the functioning of the body parts. A study of the needs of the body indicates that food must supply calcium and phosphorus for the skeleton (bones and teeth), iron for the blood, vitamins for growth and health, these and other minerals and vitamins for certain regulatory processes of the body, protein for tissue, carbohydrate and fat for energy. This relationship between the composition of food and the composition and needs of the body is basic and must be considered in all dietetic treatment, both normal and therapeutic. A knowledge of the food requirements of the body, of the food constituents necessary to fulfill them and of the foods that are sources of the various food constituents is fundamental in the construction of a diet (Tables 1, 2, 3).

REQUIREMENTS OF FOOD CONSTITUENTS—BASIC STANDARDS

Scientific studies have shown in what amounts approximately, the food constituents of carbohydrate, protein, fat, calcium, phosphorus, iron and the vitamins are needed to keep the body in health and to prevent or alleviate certain pathological conditions.

"Average weight" refers, in this book, to the weight of the individual based on sex, height and age,—designated variously in the literature as the "desired," "normal," "ideal," "optimal," or "expected" weight. Tables giving the average weight for individuals of different ages and heights have been compiled by various authorities (Tables 5 to 8). The average weight can be only an approximate measurement, at best, since the weight of an individual is influenced by type of build and by certain other factors. Thus the average weight must have a range within a limit—a variation within 10 per cent for the adult is considered safe—and should be used only as a guide. Tables usually express the weight in pounds, but these figures may be converted into kilograms,[1] the unit of the metric system commonly used for body weight in computing food requirements (Table 6).

Protein has for its primary function the building and repair of tissue (Table 1). "There is no known life without protein." It also supplies energy, each gram providing 4 calories. The extent to which a protein can perform its function depends upon the amino acids it contains. The proteins of foods from animal sources—milk, cheese, meat, fish, poultry and eggs—contain the essential amino acids, and are designated complete protein, whereas the proteins from vegetable

[1] 1 kilogram = 2.2 pounds. 1 gram is approximately $\frac{1}{30}$ of an ounce. The units of the metric system are generally used abroad and in all scientific work (Table 14).

sources—bread, cereals, vegetables, legumes and nuts—contain no appreciable amounts of some of these essential amino acids, or are altogether lacking in them, and are designated incomplete protein The soy bean, however, contains essential amino acids, and is therefore a complete protein The protein of vegetable foods must be supplemented with animal protein to ensure the maintenance of life and the support of normal growth It is especially important to provide for the child sufficient amounts of the protein foods that contain the essential amino acids

For the adult, the daily requirement of protein ranges from $\frac{2}{3}$ to $1\frac{1}{2}$ grams per kilogram of average body weight (Table 2) One gram per kilogram is often given as the recommended allowance The body may be maintained in normal condition by the use of $\frac{2}{3}$ gram per kilogram, but the usual daily intake of a person whose diet is not restricted for therapeutic or economic reasons will often approximate $1\frac{1}{2}$ grams per kilogram of average body weight

The rapid growth of the child demands a high allowance of protein (Table 2) The daily requirement ranges from 2 to 3 grams per kilogram of average body weight The usual daily intake of infants is $2\frac{1}{2}$ to 3 grams, of the school child from $1\frac{3}{4}$ to $2\frac{1}{2}$ grams, and of the child in his teens from 1 to 2 grams per kilogram of average body weight These allowances are optimal and afford a 50 per cent margin of safety [2]

Another standard used to compute the daily requirement of protein is based on the caloric requirement for moderate activity On this basis it is estimated that 10 per cent of the calories required by the adult and 15 per cent of the calories required by the child should be derived from protein

Carbohydrate provides primarily energy for body activities, and at the same time exerts a protein-sparing action (Table 1) For the adult, the daily requirement ranges from 4 to 6 grams per kilogram of average body weight, depending upon the degree of activity and the amount of fat used in the diet Each gram of carbohydrate provides 4 calories (Table 2)

For the child, the carbohydrate requirement per kilogram of average body weight is much greater, to provide not only for increased energy expenditure but also for increased rate of growth The daily requirement ranges from 6 to 10 grams per kilogram of average body weight (Table 2)

On the basis of the caloric requirement, 50 per cent to 60 per cent of the calories for the adult and 50 per cent of the calories for the child should be derived from carbohydrate

Fat is an essential constituent of every body cell Like carbohydrate it supplies energy for the body's activities and has a protein-sparing action (Table 1) By weight it contributes over twice as much energy as carbohydrate, giving 9 calories per gram The daily requirement of fat for the adult ranges from 1 to 2 grams per kilogram of average body weight depending upon the degree of activity and the amount of carbohydrate in the diet (Table 2) On this basis a proper ratio will be maintained between the carbohydrate and the fat content of the diet Some highly unsaturated fatty acids have been shown to be nutritionally essential, but it seems permissible to assume that normal dietaries will supply

[2] Sherman, Henry C *Chemistry of Food and Nutrition* 6th ed p 490–491, Macmillan Co, 1941

this need without any special planning[3]

For the child, the daily fat requirement ranges from 2 to 3 grams per kilogram of average body weight (Table 2)

On the basis of the caloric requirement, 30 per cent to 40 per cent of the total calories for the adult and 35 per cent of the total calories for the child should be derived from fat

The *energy requirement* is measured in heat units expressed in calories The body's requirement for fuel to supply energy must consider both the basal need of the body and the increased need for various grades of activity as illustrated on page 47

The *basal energy requirement*—that is, the energy requirement of the body as nearly as possible at absolute rest,—represents the minimum amount of energy needed for the inner workings of the body, such as of the heart and lungs, and for its fundamental chemical processes

There are several ways in which this can be estimated The *actual basal energy requirement* may be determined by means of a respiration apparatus which measures the oxygen consumption of the individual, from which may be computed the basal energy requirement expressed in calories

The *body surface area* is a basis used in *predicting* the basal energy requirement It is determined from the actual height and weight of the individual By means of the Dubois Surface Area Chart or its modification (Boothby and Sandiford), and tables giving the calories needed per square meter per day, the basal energy requirement in calories can be estimated (Tables 9 and 10)

The number of calories needed per kilogram of body weight per day, as estimated from many determinations of the basal metabolic rate of normal persons, is a practical method of ascertaining the basal energy requirement in terms of the *average body weight*

In a discussion of the caloric needs of children, Holt found it simpler to use the unit of body weight, and stated, "In the opinion of Benedict and Talbot there were no important differences between caloric values expressed per unit of body surface and per unit of body weight"[4]

The *total energy requirement* for the day may be determined by using the basal energy requirement, plus stated increases for the various grades of activity (Table 11)

Another method of determining the total energy requirement for the adult is based on the average weight and the number of calories needed per kilogram of body weight according to the degree of activity (Table 11) For the child, the total energy requirement is based on the factors of age, sex and activity (Tables 12 and 13) These methods have proved satisfactory in clinical practice

To determine whether the estimated amounts of the food constituents—carbohydrate, protein and fat—fulfill the energy requirements, the number of grams of carbohydrate and of protein are multiplied by 4, the number of grams of fat by 9, and the results are totaled Since the amounts of carbohydrate and fat are given in proportion to the degree of activity of the individual the results should be in approximate accord with the caloric requirement based on the average weight of the individual and the degree of activity Following the practice of supplying the food constituents in terms of body weight, it will be found that automatically the energy require-

[3] Sherman and Lanford *Essentials of Nutrition* 2nd ed p 23 Macmillan Co 1943

[4] Holt Dr L Emmett, *Food Health and Growth* p 51, Macmillan Co 1925

ments are fulfilled, that is, if the requirement of food constituents is met, the calories will be sufficient

The *mineral requirements* of the body are receiving a great deal of attention in research and in applied dietetics Certain minerals—calcium, phosphorus, iron, iodine and copper—have been found to have most important functions in connection with the regulation of body processes The study of other minerals, while it has not so far yielded conclusive evidence with respect to their definite relation to body processes, indicates their possible relationship to diet

The mineral requirements of the adult are estimated to be 0 8 gram of calcium, 1 32 grams of phosphorus and 12 to 15 milligrams of iron per day (Table 2)

The child, because of increased demands for growth, needs 1 to 1 4 grams of calcium and 1 to 1 5 grams of phosphorus per day The iron requirement of the child is based on the estimated caloric requirement, 0 5 gram of iron being allowed for each 100 calories required per day,[5] and according to age, the requirements are given in Table 2

These allowances are optimal and provide a 50 per cent margin of safety It is generally considered that if the diet fulfills the calcium, phosphorus and iron requirements, it will carry sufficient amounts of the other minerals to meet body needs The amount of iodine in food is dependent upon the iodine in the water and soil of the region in which the food is grown

The *acid base balance* is given consideration due to the claim advanced that there is an advantage in having in the diet an excess of base forming elements over acid forming elements However, Sherman stresses the fact that it is still an open question whether this is of practical importance to human nutrition[6] It has been found that when sufficient kinds and amounts of food are given to supply the necessary food constituents to meet the body requirements, an excess of base forming elements is present (Tables 46 to 48)

Vitamins are considered essential for growth and health The relative values of different foods, as sources of the various vitamins, formerly expressed by a symbol such as (+) are now given in figures The vitamin content of an increasing number of foods has been determined and on this basis a tentative standard of requirements for human beings has been recommended by the Committee on Food and Nutrition of the National Research Council, 1941 (Table 2)

THE FOOD PRESCRIPTION

The food prescription used in this book is the statement of the amounts of the food constituents—carbohydrate, protein, fat, calcium, phosphorus, iron and vitamins—and of the calories needed, per day, by an individual of a certain age, sex, height, weight and activity The units of measurements used are given in the Table of Weights and Measures (Table 14) The food prescription is written on the basis of the foregoing data and may be summarized as follows

[5] Sherman Henry C, and Lanford Caroline Sherman *Essentials of Nutrition* p 156, Macmillan Co, 1940

[6] Sherman, Henry C, *Chemistry of Food and Nutrition* 6th ed, p 247-248, Macmillan Co, 1941

SUMMARY OF BODY REQUIREMENTS IN TERMS OF FOOD CONSTITUENTS

A Basis for the Food Prescription

Basic Data			*Example of Data Applied to a Typical Individual*
Average Weight			155 pounds or 70 kilograms
Sex			Male
Age			30 years
Height			5 feet 8 inches
Activity			Moderate
Protein Standard per kilogram per day, ¾–1.5 grams			70 × 1.5 = 105 grams protein
Fat Standard per kilogram per day, 1–2 grams			70 × 2 = 140 grams fat
Carbohydrate Standard per kilogram per day, 4–6 grams			70 × 5 = 350 grams carbohydrate
Energy Requirement per kilogram per day moderate activity 40–45 calories			70 × 40 to 45 = 2800 to 3150 calories
Calories from food constituents			
Protein 1 gram = 4 calories			105 × 4 = 420 calories
Fat 1 gram = 9 calories			140 × 9 = 1260 calories
Carbohydrate 1 gram = 4 calories			350 × 4 = 1400 calories
			Total 3080 calories
Mineral Standards per day*			
Calcium 0.8 gram			Calcium 0.8 gram
Phosphorus 1.32 grams			Phosphorus 1.32 grams
Iron 12 milligrams			*Iron 12 milligrams*
Vitamin Standards per day*	Man	Woman	
Vitamin A I U	5000	5000	Vitamin A 5000 I U
Thiamine micrograms	1800	1500	Thiamine 1800 micrograms
Riboflavin micrograms	2700	2200	Riboflavin 2700 micrograms
Niacin, milligrams	18	15	*Niacin 18 milligrams*
Ascorbic Acid milligrams	75	70	Ascorbic Acid 75 milligrams
The Food Prescription			Protein, 105 grams Fat 140 grams Carbohydrate 350 grams Calories 3080 Calcium 0.8 gram, Phosphorus 1.32 grams Iron 12 milligrams Vitamin A 5000 I U, Thiamine, 1800 micrograms Riboflavin 2700 micrograms Niacin 18 milligrams Ascorbic Acid 75 milligrams

* Recommended by the Committee on Food and Nutrition of the National Research Council 1941

CHAPTER 2

THE CONSTRUCTION OF THE NORMAL DIET

THE BASIS FOR THE SELECTION OF FOOD

When the food prescription has been written, a selection must be made of the kinds and amounts of food to fulfill it In practice, the actual food intake of the individual is used as a guide in choosing the foods to be included in the prescribed diet, since it is desirable to adhere as closely to usual food habits as is consistent with health needs

The *food intake* or accustomed diet of the patient, and a review of the foods that might be used to supply the food constituents needed, would seem to indicate that there is an unlimited number of different foods for choice But when these foods are studied and classified they fall into a small number of groups, namely milk and its products, eggs, meat, fish and poultry, fats and oils, fruits, vegetables, legumes, cereals (flour, cereals, bread and crackers), sweets, and nuts

The *food constituent* of which a particular group of foods is a good source determines the value to the body of the food within that group Milk and cheese, eggs, meat, fish and poultry are given first consideration as sources of *complete protein*, potato, legumes, cereals, breads and nuts also contribute to the protein content, but being incomplete must be combined with the complete protein, cream, butter and oils for *fat*, cereal products, sugar, fruits and vegetables for *carbohydrate*, milk, cheese, vegetables and fruits for *calcium*, meat, eggs, whole grain and enriched products, vegetables and fruits for *iron*, eggs, milk, meat, fish and certain vegetables for *phosphorus*, and milk and its products, fortified vegetable fats, meat, eggs, the whole grain and enriched cereals, fruits and vegetables for *vitamins* (Table 3) It will be noted that many foods contain more than one of the food constituents, and may even be rich in several of them Some contain only a single one, as sugar in the carbohydrate group, vegetable oil in the fat group

An important development in recent years is the process of enriching foods White bread is now enriched with thiamine, niacin and iron Calcium, riboflavin and Vitamin D have been suggested as other desirable additions Many cereals have been restored to the whole grain nutritive values of thiamine, niacin and iron for the various grains In addition to this restoration some cereals are further fortified with Vitamin D The Vitamin A content of oleomargarine and other fats has been increased By various methods the Vitamin D content of milk can also be greatly increased It is desirable to use these fortified foods in place of those which have been highly refined

The *protective diet* is another helpful guide in fulfilling a food prescription Science states that if certain groups of foods are included in the diet every day in certain amounts, the food constituents necessary for the protection of health will be provided adequately,—and experience verifies this[1] The protective diet includes the following

Milk

1 pint for the adult and 1 quart for the child daily

[1] Stiebeling and Ward *Diet at Four Levels of Nutritive Content and Cost* Circular No 296, United States Department of Agriculture, Washington, D C

Protein foods

At least 60 to 100 grams of protein* per day
Each of these foods supplies about 7 grams of protein

Complete protein	*Incomplete protein*
1 ounce meat	¼ cup dried beans peas lentils (cooked)
1 egg	
1½ ounces fish	
1 glass milk	2 large potatoes
1 ounce cheese	1 cereal dish cereal
1½ tablespoons soy beans dried	2½ slices bread
	1 ounce nuts

* At least half the amount of protein must be complete protein

Bread cereals flour and flour products

Use 8 or more servings per day

Vegetables

At least 2 servings every day A green or yellow vegetable ensures vitamin A
Potato in addition to other vegetables if desired

Fruits

At least 2 servings every day A citrus fruit daily ensures ascorbic acid

Sugar

Not more than ½ pound a week of sugar
Other sweets as desired

Fats

9 teaspoons per day of fat including butter oleomargarine and other kinds of fat
At least 3 teaspoons should be fats containing vitamin A

This is a general statement of the optimal amounts of food that provide the necessary food constituents and sufficient calories The choice of foods in the diet should always have reference to the specific needs of the individual Individual taste may be satisfied by substituting for a food not desired another of approximately equivalent value,—a procedure discussed in detail in the following pages

Environmental factors must receive careful consideration in the construction of a diet, since the practice of good habits of hygiene, mental as well as physical, is essential to the success of treatment and is dependent in part upon conditions in the home, the school, and in occupation (Part I, Chapter 4)

A *nutritional history* of the patient, obtained with the aid of a special outline (p 8) will be found helpful in the study of environmental factors The data secured need not follow the sequence specified in this outline but may be set down according to the response, interest and attitude of the patient as the conference or interview proceeds

The form for the Nutritional History of the child uses the heading "School," instead of "Occupation" and "Education" as for the adult, and the family relationships are given in greater detail *

*SCHOOL Location Distance Walk Ride
Grade Recess
Hrs A.M Lunch Time
P.M Study Periods
Leaves for School—Time Returns from School—Time
Extra School Activities Home Lessons — Hours of study
Music Lessons — Hours of practice
Other Lessons — Hours
Athletics Time for play Other activities

FAMILY RELATIONSHIPS
Attitudes
Parents to each other
Parents to children
Children to parents
Children to children
Child to relatives
Relatives to child
Type of Parents
Mother
Father

NUTRITIONAL HISTORY—ADULT

Date

Name　　Diagnosis　　Nationality　　B D No

Language　　S.S in B D

Address　　Religion　　S S Outside

S E D K

Sex　Age　Ht　Ft　In　Av Wt　Lbs　Kilos　Pr Wt　Lbs　Kilos

FAMILY	No	Sex	Age	Occupation	Health
Adults					
Children					

OCCUPATION

Type of Work
Home
Outside Home

EDUCATION

Previous Training
Graduated from
Present
Trade School　　Music Lessons
Evening School　　Continuation School
Extension Classes　　Other

HOUSE—Rooms no　　Piazza　　Source of heat
Bedrooms No　　Flights　　Ventilation
Toilet—common　　Yard　　No windows
private

Bathroom　　Bathtub—stationary
location　　portable
light　　Shower
water—hot cold
how supplied—summer winter

Household Equipment　Facilities for Food Preparation

Stove—Kind　　Refrigerator—Kind
Saucepan—Sieve—Kettle　　Double Boiler —Mixing Bowl

NEIGHBORHOOD accessibility to Public bath—Public playground—Park—Community center use of

INCOME OF FAMILY Total Amount

Earnings　Aid Public　Private　Other sources

Expenditures
Rent　　Carfare
Light and Heat　　Insurance
Electricity　　Clothing
Gas　　Church
Wood　　Recreation
Coal　　Laundry
Oil　　Cleaning Material
Ice　　Food

HYGIENE—Day's Routine

Rising time Breakfast time Rest Time Place

Cleanliness of Body

Equipment Soap—face cloth—towel—nail brush—file—comb—brush—

Washing Frequency Head Neck Ears Hands Nails

Facilities Place Type

Bathing Frequency

Facilities Tub Shower Sponge Municipal

Care of Teeth—Frequency of cleaning

Equipment brush

Condition of teeth

Dental care

Elimination Time Bowel Urination

Sleeping Conditions

Location

Bedroom	Size	No occupants
Windows No	Open	Closed
Bed No in	With whom	
Bedtime	Hours of sleep	Kind of sleep
Bedclothes	Amount	Kind

RECREATION

Clubs	Special Interests
Classes	Athletics
Movies	Reading
Radio	Home—Library
	Type of Literature

RELATIONSHIPS

Family

Occupation

Companions

Mental Attitudes

MEALS	Place	Hour	Time Allowed	Time Taken	Use of Difference
Breakfast					
Noon Meal					
Night Meal					
Extra Meals					

Regularity

Appetite

Companionship

Atmosphere at meals

Method of service in the home

Table Self Family

FOODS

Attitudes Satisfactory Unhappy Finicky

Resistant Resentful Dissatisfied

Idiosyncrasies

Mastication

First Visit Food Intake for the Day			Family Purchases		
Meals	Foods	Total Amts	Per Week	Cost	Food Habits
Breakfast	Milk Fresh				
	Milk Canned				
	Cheese				
	Eggs				
	Meat				
	Fish				
	Bacon				
	Cream				
Noon Meal	Butter				
	Fat-Oil				
	Fruit				
	Fruit Dried				
	Vegetables				
	Legumes				
	Potato				
Night Meal	Cereal white				
	Cereal Wh Gr				
	Bread white				
	Bread Wh Gr				
	Crackers				
	Flour				
	Sugar				
Extras	Desserts				
	Tea				
	Coffee				
	Cocoa				
	Candy				
					Food Deficiencies
Total Money Spent per Week					C P F Ca Fe vitamin A thiamine riboflavin niacin

NUTRITION—Food Intake—

- Food Constituents
- Foods
- Food Habits and Meals
- Food Money

HYGIENE

- Personal—Body Cleanliness
- Community—Neighborhood
- Mental—Family Relationships

- Health Habits
- Recreation
- Attitudes toward food

EDUCATION OF PATIENT

- Food and Body Needs
- Food Values
- Budgeting
- *Habit Training—Food and Hygiene*
- Materials Used

FOOD ORDER PER DAY DATE

Foods	Amounts		Grams				Milli grams	I U	Micro-grams	Micro grams	Milli grams	Milli grams
	H.M	Gms	C	P	F	Ca	Fe	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk												
Cheese												
Eggs												
Chicken												
Meat												
Fish												
Bacon												
Cream												
Butter												
Oil												
10% Fruit												
Fruit												
Fruit												
5% Veg												
10% Veg												
Veg												
Cereal												
Bread												
Potato												
Sugar												
Dessert												
Total of Food Constituents												

FORM FOR COMPUTATION OF DIETS—USED FOR PATIENTS

CALCULATION OF DIET

B D No

CARD NAME AV WT ______ KILOS

		FOOD ORDER											FOOD INTAKE													
Date	FOODS	GRAMS					Milli grams	I U	Micro-grams	Micro-grams	Milli grams	Milli grams	GRAMS PER MEAL			GRAMS					Milli grams	I U	Micro-grams	Micro-grams	Milli grams	Milli grams
194		Total Amt	C	P	F	Ca	Fe	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Morn	Noon	Night	Total Amt	C	P	F	Ca	Fe	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
ORDER	Milk																									
	Cheese																									
	Eggs																									
	M F C																									
	Bacon																									
	Butter																									
	Fats																									
	Fruit %																									
	%																									
	%																									
	Veg %																									
	%																									
	Potato																									
INTAKE	Cereal																									
	Bread																									
	Crackers																									
	Sugar																									
	Dessert																									
	Totals																									

FORM FOR COMPUTING THE PATIENT'S DIET

With an understanding of the environmental influences and the food habits of the individual, and with the standards of the protective diet in mind, the diet can then be computed to fulfill the requirements of the food prescription as outlined in Part I, Chapter 1, page 5 It is helpful to group the foods that are the sources of the same food constituent, using for that purpose a computation card such as the one given here (p 12), or a similar form

In the form illustrated (p 14), the foods of the first group give, primarily, protein, the next fat, and the third, carbohydrate As most of these foods contain minerals and vitamins as well each food must be checked also for its content of calcium, phosphorus, iron and vitamins When the prescription is filled, the total amounts of the various food constituents can be found and recorded at the bottom of the computation sheet From the total number of grams of carbohydrate, protein and fat the total calories can be estimated

FOOD VALUES AND MEASURES

In the Table of Food Values and Measures can be found the amount of a serving of a particular food in terms of its weight in grams and its household measure, and the amounts of the various food constituents that it supplies (Table 15) In the case of milk, for example, the table states that one cup weighs 240 grams and contains 12 grams of carbohydrate, 8 grams of protein, 9 5 grams of fat, 0 283 gram of calcium, 0 223 gram of phosphorus, 0 5 milligram of iron, 461 I U of vitamin A, 125 micrograms of thiamine, 523 micrograms of riboflavin, 0 22 milligram of niacin, 3 milligrams of ascorbic acid, and 5 I U of vitamin D The carbohydrate, protein and fat are figured to one decimal point, but for convenience the fraction may be disregarded, or rounded to the next whole number, for example, the figure for fat in milk may be rounded to 10 grams If more than one serving of a food is required, the desired amount may be determined through multiplication

COMPUTING THE DIET

The purpose of computing the amounts of the various foods in the diet is to secure the total amount of food constituents required for body needs There is no definite procedure determining which of the food constituents—protein, fat or carbohydrate—shall be given first consideration In order to have definite figures for the following example of the method of computing the diet, specific foods were chosen to fulfill the food prescription given on page 5 The following selection of food is *not* arbitrary

Protein is considered first here in the same order as on the computation sheets (pages 12–14)

FOODS SELECTED FOR PROTEIN VALUES*

Foods	Amounts		Grams					Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
	Household Measure	Grams	Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	566	446	1	922	250	1046	44	6
Cheese	2 T	30	1	7	10	279	210	3	450	7	165	06	
Egg	1	50		7	5	027	112	1 5	500	75	125	03	
Meat poultry	4 oz	120		20	26	012	200	2 8		180	240	9 44	

* ¼ T gelatin and 1 cup bouillon can be written in the computation sheet and would contribute 8 grams of incomplete protein

TYPICAL DIET FOR

Name Sex Age Ht Ft In Av Wt Lbs K Pr Wt Lbs
Record No
Nationality Occupation Activity Income

Food Constituents and Calories Required for	Gram			Calories	Grams		Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
	Carbohydrate	Protein	Fat		Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Normal Diet												
________ Diet												

COMPUTATION OF DIET

Foods	Amounts		Grams					Milligrams	I U	Micrograms	Micro-grams	Milligrams	Milligrams
	Household Measure	Grams	Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk													
Cheese													
Egg													
Meat poultry													
Fish													
Cream													
Butter													
Oil													
Other fats													
Fruit %													
%													
%													
Vegetables													
%													
%													
Potato													
Bread White													
Whole Grain													
Other breads													
Crackers													
Cereals Refined													
Whole Grain													
Sugar													
Jelly													
Molasses													
Other sweets													
Candy													
Desserts													
Beverages													
Totals of the Food Constituents													
Calories from the Food Constituents						Total Calories							

Signed

When the figures of the columns are added the following amounts will be found toward *fulfilling the requirement* of the food prescription

Carbohydrate	25	grams
Protein	58	grams
Fat	60	grams
Calcium	.884	gram
Phosphorus	.968	gram
Iron	5.6	milligrams
Vitamin A	1872	I U
Thiamine	512	micrograms
Riboflavin	1576	micrograms
Niacin	9.97	*milligrams*
Ascorbic Acid	6	milligrams

It will be noted that milk is the only one of these protein foods to carry carbohydrate They provide, however, 50% of the complete protein needed, nearly *50% of the fat, calcium sufficient for the* adult, almost all the phosphorus required, and ½ the requirement of iron

Fat is the next food constituent considered With 60 grams of fat already contributed by the protein foods, sufficient amounts of other foods that are rich sources of fat will fulfill approximately the requirement of 140 grams The following selection is made—again remember the choice is not arbitrary

Foods Selected for Fat Values

Foods	Amounts		Grams					Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
	Household Measure	Grams	Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Cream, light	½ c	120	6	4	24	.112	.096	2	1416	40	200		
Butter	6 t	30			24	.004	.004		810				
Mayonnaise	3 t	15	5		11	.002	.005	1	30	4	10		

When the figures of the columns are added the following amounts will be found toward fulfilling the requirement of the food prescription

Carbohydrate	6.5	grams
Protein	4	grams
Fat	59	grams
Calcium	.118	gram
Phosphorus	.105	gram
Iron	3	milligram
Vitamin A	2256	I U
Thiamine	44	micrograms
Riboflavin	210	micrograms
Niacin	—	milligrams
Ascorbic Acid	—	milligrams

These foods will be seen to be valuable primarily for their fat and vitamin A content

Carbohydrate is the third group of food constituents to be considered here The amount needed for the food prescription is 350 grams It will be noted that the foods already selected for protein and fat do not carry significant amounts of carbohydrate, and that only the limited amount of 31.5 grams has been accumulated The foods that are chief sources of carbohydrate—fruits, vegetables (especially potato), bread, crackers, cereals, sugars, jellies and desserts—will provide the amounts necessary to fulfill the carbohydrate requirement In the following selection special foods are chosen from the different groups of food used —for *example rolled oats from the cereal group* and the orange from the fruit group —to demonstrate that some foods relied upon for carbohydrate will make significant contributions also of minerals and vitamins

FOODS SELECTED FOR CARBOHYDRATE VALUES

Foods	Amounts		Grams					Milli grams	I U	Micro-grams	Micro grams	Milli grams	Milli grams
	Household Measure	Grams	Carbo hydrate	Protein	Fat	Calcium	Phos phorus	Iron	Vitamin A	Thia mine	Ribo flavin	Niacin	Ascorbic Acid
Fruit													
10 per cent—orange	1 m	100	11	1		0?4	019	4	225	110	50	22	54
15 per cent—apple	1 m	150	21	1	1	011	018	6	108	60	45	5	9
?0 per cent—banana	½ m	50	12	5		004	014	3	175	?5	38	31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	5	007	0?1	6	1000	75	45	58	22
5 per cent—lettuce	3 lvs	30	1	5		023	009		1500	23	45		5
5 per cent—string beans	1 s d	100	7 5	2 5		065	044	1 4	1000	75	110	64	25
10 per cent—carrots	1 s d	100	9 5	1	5	045	041	6	6000	100	90	1 47	4
Potato	1 L	200	38	4		0?2	114	2 6	60	200	80	2 36	20
Bread white enriched	3 sl	90	48	7 5	1 5	060	090	9		193	156	81	
whole wheat	2 sl	60	30	6	1	030	090	1 2		19	108	1 24	
Flour	1 T	7	5	5		001	007	1		?8	18	09	
Crackers	2	8	6	1	1	00.	008	2					
Cereals													
Macaroni cooked	¾ c	150	22	4	5	008	044	4		15		11	
Oats rolled cooked	¾ c	180	18	5	2	016	126	1 5		219	65	40	
Sugar	9 t	45	45										
Jelly	6 t	40	30										
Desserts													
Cake	2 cu		26	2	4	018	032	3	154	62	69	20	

When the figures of the columns are added the following amounts will be found toward fulfilling the requirement of food prescription

Carbohydrate	334	grams
Protein	37 5	grams
Fat	12	grams
Calcium	334	gram
Phosphorus	676	gram
Iron	11 1	milligrams
Vitamin A	10 222	I U
Thiamine	1380	micrograms
Riboflavin	919	micrograms
Niacin	9 18	milligrams
Ascorbic Acid	144	milligrams

It will be noted that these foods supply almost the total carbohydrate required However, they provide only incomplete proteins The minerals and vitamins are *in small amounts but make significant* contribution to the total because these foods are eaten in abundance

The total figures for the different food constituents show that the foods selected practically and satisfactorily fulfill the food prescription, as follows

TOTAL VALUES OF FOODS SELECTED FOR FOOD PRESCRIPTION

	Grams			Cal ories	Grams		Milli grams	I U	Micro grams	Micro-grams	Milli gram	Milli-grams
	Carbohydrate	Protein	Fat		Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Food Prescription	350	105	140	3080	8	1 32	12	5000	1800	2700	18	75
Computed Diet	365 5	99 5	131	3039	1 336	1 749	17	14350	1936	2705	19 15	150

The *calories* are checked by multiplying the total grams of carbohydrate and protein by 4, the fat by 9, and totaling the results. It has been stated (Part I, Chapter 1) that the amounts of carbohydrate and fat are prescribed according to the degree of activity. Therefore it is evident that if the food prescription for carbohydrate, protein and fat is fulfilled, the caloric requirement will be met.

The *minerals* are assured in adequate amounts since this diet is based on the plan of the protective diet. The calcium is adequate because liberal amounts of milk and cheese are used. The milk, eggs, meat, whole grain bread and cereal provide sufficient phosphorus. The iron comes largely from the meat, egg, whole grain and enriched bread and cereal, fruits and vegetables (Table 3). Other minerals, such as copper and manganese (Tables 37, 38), although important in the diet, are not computed here since it is generally assumed that a diet which supplies sufficient amounts of calcium, phosphorus and iron will carry these other minerals in amounts adequate for safety. Not until there is a pathological condition does definite consideration need to be given to iodine.

The *vitamins* will also be assured in sufficient amounts, since this diet contains the foods included in the protective diet. The adequacy of the vitamin content is verified by calculating the vitamin values of the various foods (Table 15).

The *acid base balance* need not be a matter of concern because a protective diet contains liberal amounts of milk, fruits and vegetables, which give a basic ash and therefore there is in this diet a sufficient excess of alkaline ash over acid ash (Table 48).

If in constructing a diet it is found that the kinds and amounts of food selected do not meet the food prescription, it will be necessary to increase or decrease the amounts of food used, or to substitute foods with different food values, until the need is approximately met. After becoming familiar with the composition of the foods, the food prescription can usually be filled at the first computation, with few, if any, changes.

FOOD FOR THE DAY

Since the patient must assume the responsibility for carrying out the diet in the interval between visits to the clinic, information given him relative to the diet, to be of practical use, should be in accord with his established food habits, tastes and income, and should be presented to him in a clear and concise manner (Part I, Chapters 5 and 6).

The kinds and amounts of food that have been selected with the patient to fulfill the food prescription may be listed on a special form as follows:

FORM WITH FOODS FOR THE DAY WRITTEN IN, TO GUIDE THE PATIENT IN CARRYING OUT THE FOOD PRESCRIPTION

Food for the Day

Milk	2 cups
Cheese American	1 ounce or 2 tablespoons
Egg	1
Meat	4 ounces or ¼ pound
Cream light	⅓ cup
Butter	6 teaspoons
Mayonnaise	3 teaspoons
Fruits	
10 per cent	1 serving
15 per cent	1 serving
20 per cent	1 small serving
Vegetables	
5 per cent	2 servings
10 per cent	1 serving
Potato	1 large
Bread	5 slices
Crackers	2 saltines
Cereal	2 servings
Sugar	9 teaspoons
Jelly	6 teaspoons
Desserts	
Cake plain	2 inch cube
Gelatin	¼ tablespoon
Bouillon	1 cup
Beverages	
Tea and coffee as desired	

Foods Selected for Carbohydrate Values

Foods	Amounts		Grams					Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
	Household Measure	Grams	Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Fruit													
10 per cent—orange	1 m	100	11	1		0 4	018	4	225	110	50	2?	54
15 per cent—apple	1 m	150	21	1	1	011	018	6	108	60	45	75	9
0 per cent—banana	½ m	50	12	5		004	014	3	175	25	38	31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	5	007	0?1	6	1000	75	45	59	22
5 per cent—lettuce	3 lvs	30	1	5		023	009		1500	23	45		8
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10 per cent—carrots	1 s d	100	9 5	1	5	045	041	6	6000	100	90	1 47	4
Potato	1 L	?00	38	4		0 ?	114	2 6	60	200	80	2 36	20
Bread white enriched	3 sl	90	48	7 5	1 5	060	090	9		198	158	81	
whole wheat	2 sl	60	30	6	1	030	090	1 2		192	108	1 24	
Flour	1 T	7	5	5		001	00,	1		6	18	09	
Crackers	2	8	6	1	1	002	008	2					
Cereals													
Macaroni cooked	¾ c	150	?2	4	5	006	044	4		15		11	
Oats rolled cooked	¾ c	180	18	5	2	016	1?8	1 8		219	65	40	
Sugar	9 t	45	45										
Jelly	6 t	40	30										
Desserts													
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FOOD FOR THE DAY

Since the patient must assume the responsibility for carrying out the diet in the interval between visits to the clinic, information given him relative to the diet, to be of practical use, should be in accord with his established food habits, tastes and income, and should be presented to him in a clear and concise manner (Part I, Chapters 5 and 6)

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Food for the Day

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Cheese American	1 ounce or 2 tablespoons
Egg	1
Meat	4 ounces or ¼ pound
Cream light	¼ cup
Butter	6 teaspoons
Mayonnaise	3 teaspoons
Fruits	
10 per cent	1 serving
15 per cent	1 serving
20 per cent	1 small serving
Vegetables	
5 per cent	2 servings
10 per cent	1 serving
Potato	1 large
Bread	5 slices
Crackers	2 saltines
Cereal	2 servings
Sugar	9 teaspoons
Jelly	6 teaspoons
Desserts	
Cake plain	2 inch cube
Gelatin	½ tablespoon
Bouillon	1 cup
Beverages	
Tea and coffee as desired	

is irritating to the ulcer and must be softened as much as possible or removed by cooking and straining. Enriched white bread and very finely ground whole grain or enriched cereals should be used in preference to the coarser products. Because concentrated sweets may ferment and produce gas, they should be given only in very small amounts. Certain of the protein foods, as meat, fish and poultry, contain fiber which should be avoided. These foods, and soups, gravies and chowders made from them, contain extractives which stimulate the flow of the hydrochloric acid, for which reason they should be omitted until the patient is convalescent. Other causes of irritation are the acid tasting foods, condiments, spices, coffee, tea, cocoa, very hot or cold foods and fried foods. Orange juice and tomato juice, although acid tasting foods, should be given as soon as possible for their ascorbic acid content. If diluted or given after other foods, they may be tolerated very early in the treatment. The use of alcohol and tobacco is usually strictly prohibited as nicotine stimulates the flow of hydrochloric acid. The meals should be small in amount, with regular feedings between meals so that some food will be present in the stomach at all times to prevent free acid from irritating the ulcer. Milk combines readily with hydrochloric acid and if given regularly at frequent intervals helps to lessen the irritation. Not only must there be conditions for physical rest, but in the treatment of the ulcer patient special attention must be given to causes of emotional disturbances, which prevent the effectiveness of the diet.

Bleeding ulcer, when treated according to the Meulengracht diet uses the food as in the last column on page 181. The principle for dietary treatment of ulcer holds good for the Meulengracht diet. Its principal value is to give sufficient of the food constituents to compensate for malnutrition caused by hemorrhage. However, some authorities give nothing by mouth until the bleeding has stopped.

In **gastritis** the treatment parallels the treatment of ulcer.

In **underweight,** there is a need of food in excess of normal body requirements, to provide for storage of adipose tissue. Therefore, larger amounts of carbohydrate and fat are given, to increase the caloric value of the intake. There must also be sufficient thiamine to help metabolize the carbohydrate, and to stimulate the appetite for the required amount of food. It is important to find the cause of the underweight,—whether it is due to insufficient amounts of the food constituents and of the kinds of foods to supply them, to poor utilization of the food eaten, or to emotional or endocrine factors. The treatment of these conditions is necessary for the effectiveness of the diet. Care should be taken to choose as sources of the food constituents foods which are most acceptable to the patient, to encourage him to take the desired amounts. Too much bulk is not desirable because it gives a feeling of satiety. Sources of concentrated carbohydrate and fat, such as sugar, cream and butter, are used, but these must be given carefully because they cloy the appetite if taken in too large amounts (Parts III, Dietary Outlines and IV, Diets).

In order that sufficient amounts of food shall be taken, it is frequently desirable to give intermediate feedings, but if this destroys the appetite for the regular meals they should be omitted and the necessary amount of food for the day taken in the regular meals.

In **obesity,** there is an excess storage of adipose tissue. Here again it is essential to learn the cause, emotional or pathological, underlying the condition. It is

evident that the procedure in dietetic treatment is to reduce the amount of the food constituents, carbohydrate and fat, thereby decreasing the caloric value of the intake The protein remains normal Although the amount of food is limited, the foods chosen should supply minerals and vitamins sufficient for the protection of health, and provide sufficient bulk to give a feeling of satisfaction (Parts III Dietary Outlines and IV, Diets)

In diabetes, the body part affected is known to be the Islands of Langerhans of the pancreas, the dysfunction of which results in a deficiency of insulin Insulin is the internal secretion of the pancreas which is of fundamental importance for proper carbohydrate metabolism New discoveries have been made in the inter relation of the secretions of the endocrine glands to the pancreas, mainly the pitui tary, adrenals and thyroid Although the evidence for this relationship is sig nificant it is not as yet conclusive How ever, the influence of endocrine secretions should be given consideration in the treat ment of diabetes For instance, in stud ies of the pancreas in relation to other endocrine glands it has been found that when there is an excess amount of these other endocrine secretions it disturbs the normal equilibrium between the insulin and the secretions of these glands, and necessitates an increased amount of insu lin for carbohydrate metabolism

It has also been found through experi mentation that insulin and high amounts of fat in the diet lessen the amount of insulin secreted by the pancreas, thereby resting it It may also be assumed that high amounts of carbohydrate will in crease the secretion of insulin by the pancreas, thereby placing a strain on the pancreas unless sufficient insulin is given to protect it

From the above evidence many authori ties believe today that diets low in carbo hydrate and liberal in fat should be prescribed, and insulin should be adminis tered if necessary early in the treatment of the disease and in sufficient quantity to metabolize all of the carbohydrate pre scribed in the diet

These new discoveries and changing viewpoints have influenced the type of diet advocated for the diabetic, and there are many types of diets according to the belief of various authorities The evi dent procedure, in any case, however, is to consider a modification of the food constituents that will counterbalance the deficiency of insulin Bottle insulin should be given if necessary to insure the metabolism of the entire amount of carbo hydrate needed by the body and to keep the blood sugar level within the normal range and the urine approximately sugar free Even in the diet with insulin, about one half the carbohydrate, one to one and one half times the fat and the same amount of protein of the average normal diet is usually prescribed The caloric value of the intake thus provided is satis factory since it is desirable for the diabetic to stay within his normal weight, and since most patients seem to gain weight more easily when taking insulin It has also been shown that if the caloric value of the intake is below the normal require ment over a period of time, the basal metabolic rate will be lowered thereby decreasing the actual requirement of food Present day methods of treating diabetes allow the inclusion in the diet of amounts of carbohydrate foods adequate for body needs This obviates the need of special "diabetic foods," such as diabetic bread and other products

When there is a high blood cholesterol the fat is greatly decreased and vegetable fats are given In associated conditions such as underweight the carbohydrate

may be low normal and the fat may be high normal When the diet is decreased in carbohydrate and fat, the minerals may *remain normal, but it is almost impossible* to satisfy the standard vitamin requirements without medication

For normal growth and development the child patient requires a normal diet with sufficient insulin to utilize it Concentrated sweets are omitted

In **liver disorders,** it must be remembered that "every kind of food ingested demands activity on the part of the liver " The liver is so closely involved in the metabolism of the various food constituents that these must be carefully evaluated in the diet according to the type and extent of the impairment of the liver function

"The loading of the liver with glycogen *establishes a most favorable condition for* the functioning of the liver " In both acute and chronic liver disorders the carbohydrate is given fifty per cent above the normal

The migration of fat to the liver is small when the liver is charged with glycogen *and protein This is the most prophy*lactic condition for the liver The fat content in the diet is reduced in chronic and acute disorders and in hypercholesterolemia When the biliary secretion is lessened and fails to reach the intestines and impairs the digestion and absorption *of fat, the fats are decreased*

The liver has a most important part in protein metabolism, converting the products of the cleavage of amino acids (ammonium salts) into urea The liver also plays an important role in the storage of protein, and this reserve protein helps to *protect the liver*

Since only foods containing sterols from vegetable sources are used in hypercholesterolemia, the vitamin content of this diet is diminished In all the diets the foods must be carefully calculated with respect to their vitamin content Medication will often be necessary, as thiamine, niacin, and riboflavin, especially, seem to have a protective action for the liver

Diseases of the biliary tract are closely associated with liver disorders As a precaution in liver disturbances the dietary principle involved in the dietetic treatment of the gall bladder is generally followed, even when the biliary tract is not affected The diet prescribed is bland, *non irritating and non stimulating*

Alcohol is prohibited by clinicians, and tea and coffee are not generally allowed

Meals are taken customarily, with intermediate feedings, usually of fruit juices, to help fulfill the high carbohydrate requirement

*In **gall bladder disturbances,** of certain* types, the diet usually given is low in fat (Table 26) and contains normal or increased carbohydrate, normal amounts of protein, normal amounts of minerals and high amounts of vitamins The foods chosen should be those that are easily *digested Condiments and a high resi*due are contraindicated to avoid distention and increased peristaltic action of the intestines with consequent irritation of the gall bladder (See Part III, Peptic Ulcer) Usually small meals are given at frequent intervals

*In the **ketogenic diet,** the carbohydrate* is reduced to the lowest practical minimum and the fat is greatly increased, which results in an incomplete oxidation of the fat, producing a ketosis The protein is low normal It is impossible to supply the normal requirement of minerals and vitamins by the foods allowed in the diet and therefore the minerals and vitamins are prescribed as medication Fillers which have no food value, such as agar jelly and bran wafers, *help to give*

a feeling of fullness and satisfaction and provide a means of utilizing the cream and butter in the diet (Parts III, Dietary Outlines and IV, Diets, and Table 55)

In **nephritis,** the kidneys are affected The protein content of the diet is modified according to the type of disease In acute nephritis the protein is decreased to low normal, or even much below the normal, to lessen the work of the kidneys The carbohydrate and fat remain normal except that the high normal is often used to provide sufficient calories when the protein is greatly lowered In the presence of edema the fluids are restricted, depending on the previous day's output of urine

In subacute nephritis, it is now common practice to give adequate amounts of protein, although many physicians restrict animal protein to a minimum and some omit it from the diet entirely In the nephrotic type with edema the protein is increased in an attempt to replace its loss from the body The fat content is sometimes reduced on the theory that this will reduce the blood cholesterol which is usually high The other food constituents should be given in normal amounts In the treatment of edema, some authorities recommend administration of acid salts together with a neutral diet or one containing a preponderance of acid ash and restriction of sodium chloride (Table 40)

In chronic nephritis, the normal diet is given and the output of urine determines the amount of fluid intake allowed Protein is restricted in the terminal stages of renal failure (Parts III Dietary Outlines and IV Diets)

In **pregnancy,** care must be taken to provide minerals and vitamins in adequate amounts and the content of the normal diet is increased with respect to these food constituents If the food intake does not provide them in sufficient amounts, medication should be given During the last months of pregnancy it is usual to increase the caloric content of the diet, but when there is an excessive gain in weight the caloric value of the intake may have to be restricted When kidney complications are present the protein intake is reduced For the condition of pernicious vomiting in pregnancy, the carbohydrate is increased to provide a glycogen reserve, and the fat, which is usually not well tolerated, is decreased Small, frequent feedings of dry food with little or no fluids are usually better tolerated in this condition (Parts III, Dietary Outlines and IV, Diets)

In **rickets,** there is a faulty metabolism of calcium and phosphorus due to an incorrect balance between calcium and phosphorus and vitamin D as a result of dietary deficiencies or poor environmental conditions, or both If the requirement of calcium and phosphorus cannot be supplied by the diet, medication should be prescribed It is most important that children especially have sufficient fish liver oil to supply the required vitamin D However milk can be greatly increased in vitamin D value by various methods Liberal amounts of vitamin A and ascorbic acid also should be supplied for skeletal development, for "care must be taken not to attribute entirely to vitamin D what is here partly due to vitamins A and C also "[1] The diet should contain adequate amounts of the other food constituents (Part III, Dietary Outlines)

For *other diseases* not included in the Dietary Outlines (Part III) and for which diet is a part of medical treatment, the construction of the diet can be evolved by consideration of the factors given under

[1] Sherman, Henry C *Chemistry of Food and Nutrition* 4th edition p 445 Macmillan Co 1932

DIET THERAPY IN TERMS OF FOOD CONSTITUENTS

Condition	
Carbohydrate	
Acidosis	
Epilepsy	–
Pregnancy	+
Pyelitis	–
Diabetes	–
Diarrhea	+
Hyperthyroidism	+
Liver disorders	+
Obesity	–
Underweight	+
Protein	
Liver disorders	N
Nephritis	
Acute	–
Chronic	N
Nephrosis	+
Pregnancy (toxemia)	–
Fat	
Acidosis	
Epilepsy	+
Pregnancy	–
Pyelitis	+
Diabetes	N
Diarrhea	–
Gall bladder disturbances	–
Liver disorders	–
Nephrosis	–
Obesity	–
Ulcer	+
Underweight	+
Calcium and Phosphorus	
Dental defects	+
Certain diseases of the skeletal structure	+
Pregnancy	+
Rickets	N
Iron	
Pregnancy	+
Secondary anemia	N*
Iodine	
Goiter	+
Vitamin D	
Dental defects	+
Certain diseases of the skeletal structure	+
Lactation	+
Pregnancy	+
Rickets	+
Certain skin disorders	+
Vitamin A	
Dryness and scaliness of skin and mucous membrane	+
Impaired reproduction and lactation	+
Lowered resistance of mucous membrane of respiratory and gastro-intestinal tract to infection	+
Night blindness	+
Ophthalmia, Xeropthalmia, Keratomalacia	+
Pregnancy and lactation	+
Thiamine	
Anorexia	+
Beri beri	+
Circulatory disturbances	+
Digestive disturbances	+
Disturbances of central nervous system	+
Impaired reproduction and lactation	+
Muscular weakness	+
Pellagra	+
Polyneuritis	+
Pregnancy and lactation	+
Riboflavin	
Anorexia	+
Cheilosis	+
Digestive disturbances	+
Disturbances of central nervous system	+
Lesions of mucous membranes and skin	+
Lowered resistance to infection	+
Microscopic changes in eyes	+
Pellagra	+
Poor condition and loss of hair	+
Pregnancy and lactation	+
Niacin	
Dermatitis	+
Disturbances of central nervous system	+
Gastro intestinal disorders	+
General muscular weakness	+
Loss of appetite	+
Pellagra	+
Soreness of mouth and tongue	+
Ascorbic Acid	
Anemia	+
Damaged heart conditions	+
Decalcification of bones and teeth	+
Hemorrhages of capillaries	+
Lesions of gums	+
Lowered resistance to infection	+
Pregnancy and lactation	+
Scurvy	+

*With medication

CHAPTER 4

ENVIRONMENTAL FACTORS THAT INFLUENCE THE EFFECTIVENESS OF THE DIET—PHYSICAL AND MENTAL

THE SCIENCE OF PLANNING THE DIET

In planning a diet it is always necessary first to consider the body requirements in terms of food The body requirements and the computation of the kinds and amounts of food necessary to fulfill them have been described in detail (Parts I and II) The use of these data may be called the *science* of planning the diet

THE ART OF PLANNING THE DIET

But more than science must enter into effective dietetic treatment, for the diet is planned for a human being who cannot be controlled like an animal under experimentation The influence of personality traits and of a great variety of factors in family and community life must be considered and the adaptation of the diet to these factors may be called the *art* of planning the diet

'What is spoken of as a 'clinical picture is not just a photograph of a man sick in bed it is an impressionistic painting of the patient surrounded by his home his work, his relations his friends his joys, sorrows, hopes and fears [1]

IDENTIFICATION OF THE PATIENT

To plan a dietetic regime that will be possible of fulfillment in the home environment it is essential to obtain, from records and from careful study of the patient a mental picture of him against the background of his habits and attitudes his desires and his necessities

[1] Peabody, Francis *Doctor and Patient* p 33 Macmillan Co 1930

The information received from the patient on admission to the outpatient department or in the office, and the data on the medical records will be helpful The patient's name often carries certain implications pertaining to cultural and environmental backgrounds, nationality, and food habits and customs The home address offers a clue to the nature of the facilities for the purchase, care and preparation of food, as well as to the conditions favorable to proper sleep, recreation and other health habits

NUTRITIONAL HISTORY

The information obtained from the Nutritional History (Part I, Chapter 2, p 8) will give much data concerning the physical environment and also concerning the patient's mental and emotional attitudes toward food which influence markedly the pattern of food behavior

To assist the understanding of the intricate interrelationships of the environmental factors, physical and mental, that may affect the outcome of the diet the chart on page 32 is given as a basis for study

INTERRELATIONSHIP OF FOOD AND THE PHYSICAL ENVIRONMENT

Certain of these environmental factors affecting dietary habits will be discussed here, first in terms of their physical aspects Later it will be shown how these correlate with mental attitudes toward food

Factors Other than Food that Influence the Diet

- Identification of the patient
  - Name
  - Address
  - Religion
  - Nationality
  - Language Spoken
  - Education
  - Mental Capacity
  - Occupation
  - Income
  - Expenditures
  - Family—number adults children
- Home environment
  - Neighborhood Type of living quarters
    - Number of rooms
    - Floor
    - How heated
    - How lighted
    - Piazza
    - Yard
  - Household facilities
    - Care and preparation of food
      - Stove—kind
      - Sink
      - Refrigeration
      - Storage space
      - Utensils
    - Personal hygiene
      - Cleanliness
        - Bathing
          - Home
            - Tub portable or set
            - Water how heated
          - Community
        - Care of hands Nails Teeth
          - Equipment
        - Laundry
          - Commercial
          - Home
            - Wet wash
            - Flat work
            - Tub portable or set
            - Washing machine
            - Water how heated
      - Bowel elimination
        - Toilet
          - Private or common
          - Location
          - Condition—light heat ventilation
      - Sleep and Rest
        - Number in room
        - Number in bed
        - Ventilation
        - Type of bed and bed clothing
      - Recreation
        - Facilities in the home
        - Facilities in the community
- Daily regime
  - Household regime
  - Occupation
    - Industry
    - Home
    - School
    - Other occupation
  - Recreation
  - Exercise
  - Rest and sleep
- Relationships—Family school occupational other relations
- Mental Attitudes

The Income

The income controls the standard of living to so great an extent, with respect both to body needs and the satisfactions of life, that it must always be given due consideration in relation to the diet To judge the adequacy of an income it is necessary, in food treatment as in social treatment, to know the number of people dependent upon it, the basic needs of each

individual and the requirements for fulfilling these needs in accordance with the standards of the individual or family concerned (Part I, Chapter 2)

The necessaries of life, such as food, shelter, clothing, and savings, are closely interrelated in their demands upon the income, and it requires definite planning to keep the outlay for them in proper ratio It is essential in dietetic treatment to be aware of the extent to which these demands, singly or in combination, may prevent the fulfillment of the body's need for sufficient food Primary needs cannot be satisfied when the income is below the minimum level of the cost of living Under such conditions, one or more of these needs will inevitably fall below good health standards

Food is usually the need that first suffers this restriction It is true that in diets on all levels of income there are only a certain number of food groups from which to choose, but with the lower level income there are definite restrictions with respect to the kinds and amounts of foods within these groups that can be purchased, and the degree to which desires can be satisfied

The diet planned at the minimum cost must be followed strictly in accordance with the specifications of the expert who plans it In fact the diet of minimum cost requires able management and it takes a person of initiative and ability to carry it out successfully One might call it a border line diet, with little margin for safety The typical diets and menus given in this book (Part IV) are what would be called "liberal," in terms of income, with respect to the amounts and kinds of foods they allow

Shelter, the home, should supply suitable facilities and equipment for the care and preparation of food, for maintaining good habits of personal hygiene (including rest and sleep and cleanliness), for recreation, and for satisfying as nearly as possible the desire for wholesome living The location of the home becomes a factor in relation to income when it entails outlay for lunches and transportation With the low income, these expenses limit further the money that can be spent to fulfill food requirements The paragraphs, "Food Within the Home," and "Food Outside the Home" (p 34) consider further the interrelationship of food and shelter

Clothing can be considered as the shelter or covering of the body, as the home shelters the family or individual, and thus it affects the physical health The type of clothing needed varies with the age, sex, size, occupation and activity of the individual, as well as with climatic conditions Again, the standard that is maintained with respect to health and taste in the matter of clothing influences the expenditure of the income sometimes to the neglect of food But as "food is more nearly a fixed requirement,' it is truly stated by one writer that the less the worker earns the greater the proportion of his income that must be spent for food, to the renouncement of all other desires On the low income, it is difficult to obtain food for caloric requirements and in cold weather, sufficient coverings to maintain needful body heat

Savings gives a sense of security, and this is desirable However, unless the income is above that necessary to maintain standards of health, the savings may

[1] It is interesting to note in 'Diet at Four Levels of Nutritive Content and Cost Stiebeling and Ward Circular No 296 U S Dept of Agriculture, that as the level of income is raised the outlay for milk, fruits vegetables meat fish poultry and eggs increases while that for bread, flour cereals and legumes decreases Your Meals and Your Money ' by Gove Hambidge which is an interpretation of the above circular contains a chart, p 53 that illustrates graphically this trend in the economics of food consumption

be carried at the expense of some of the necessaries of life "Not until they (food, shelter—including light and heat—clothing, and incidentals covering health and cleanliness) have been provided for should anything be set aside under the heading of savings or insurance "[3]

Nationality

Nationality, racial traditions and age old practices affecting the choice and preparation of food play a large part in determining the eating habits of the family and the individual To the foreign born facing new and unaccustomed conditions on every hand, not the least difficult problem is that of obtaining sufficient and acceptable food While many of their native foods can be procured in this country, and can be prepared and served in customary ways, on the other hand subtle but definite influences lead the foreign born gradually to adopt some of the food habits of the new environment The younger generation, entering the life of the community through school and work, brings back into the home the habits and customs of neighbors and mates, and the family food habits become a fusion of those of the native country with those of the adopted country All too frequently this makes for an inadequate diet This is true especially of those who come to live in cities from villages and farm districts where they have always produced much of their own food Many of these people are to be found in the low income group in this country With the unwonted demands on their limited funds they naturally turn to the foods that are the cheapest and most filling—the cereal group—with the result that foods are not purchased in proper kinds and amounts for body needs (Table 4)

[3] Taylor Maurice *The Social Cost of Industrial Insurance* Alfred A Knopf, 1935

Food Within the Home

A lack of knowledge of ways of purchasing, storing, and preparing food, as well as of food values, conditions the feeding of the family The ability of the homemaker to choose foods that are economical and yet meet the body needs, and to prepare them in an appetizing manner even with poor facilities, is a most influential factor in the cultivation of good food habits The cost of fuel, the type and condition of the stove, and the number and kinds of cooking utensils that the family possesses may limit the number of foods that can be prepared at the same meal, as well as the methods of preparation The means for refrigeration and for storage are other factors in determining the selection, conservation, and preparation of food If sufficient money is not available, or if the wage earner and not the homemaker controls the purse and the purchase of food, or if there is not storage space, the homemaker cannot take advantage of sales, or practice the economy of buying in large quantities Sometimes there is no place in the neighborhood where the housewife can buy the desired food economically, while buying in the more distant markets involves the expense of transportation and the carrying of burdensome amounts Often medical treatment requires that the homemaker shall shop under conditions that will entail least physical strain

Food Outside the Home

Some members of the family—as the child at school or the adult at work—must frequently eat away from the home The adequacy of the meal that is carried from the home will again depend largely upon the ability of the homemaker to choose and prepare proper and appetizing food Perhaps the meal is eaten in the restaurant and the responsibility will lie upon

the individual himself to select food with special thought for the fulfillment of body needs The greater expense for meals eaten in the restaurant makes a wise choice of food difficult especially if the cost must be kept at the minimum, and the difficulty is more serious when the individual must eat all of his meals in the restaurant, and becomes complicated indeed when the choice of food must be governed by the requirements of the therapeutic diet

Even when food is provided in kinds and amounts necessary to fulfill body needs, it cannot serve its purpose successfully unless habits of good personal hygiene are established by the patient to keep the body in fit physical condition

Sleep and Rest

The quality of sleep and rest is greatly dependent upon the type of the home environment and the regime of the individual and the family To ensure restful sleep there should be proper sleeping conditions,—comfortable beds with no crowding, clean and suitable bedclothing, proper temperature and ventilation, and the sleeping quarters so arranged that any member of the family who might need or wish to rest during the day or to retire early could do so without being disturbed

Rest reduces the energy requirement of the body It is an important factor, therefore, in the dietetic treatment of the underweight Fatigue induced by over activity, or lack of proper sleep and rest, may affect the appetite so unfavorably that the food intake will be insufficient for body needs

Body Cleanliness

While the relation between body cleanliness and food for body needs may seem slight, yet in our modern culture, cleanliness of teeth, hands and nails is associated with food habits Principles of sanitation and of preventive medicine are also here involved, with their inferences with respect to the relation between cleanliness and communicable disease To meet the needs of cleanliness as a sanitary measure, adequate facilities should be available in the home, the school, in industry, and in the community at large The school and community often assume the responsibility of supplying facilities lacking under poor housing conditions, as in the case of the public bath

Laundry

The cost of supplies for both body cleanliness and laundry must be accounted a definite charge against the income, and estimated in balancing expenditures Here again care must be taken lest the money necessary for food be encroached upon

Adequate equipment and materials for laundry or "clean clothes" will also depend largely on the type of shelter or home Facilities will range from the portable tub and no running water, demanding a heavy output of energy, to the modern set tub with running water, and even the mechanical washing machine and instantaneous hot water These details greatly influence the demands on the energy of the homemaker A source of release for the woman of inadequate equipment is the "wet wash" or "flat work done by the commercial laundry This again is often a necessary prescription for the patient whose physical condition does not permit severe activity

Bowel Elimination

Proper habits of bowel elimination are related not only to the kinds and amounts of the food and the fluid intake but also to such factors as the daily regime and the

toilet facilities available in the home and the school or the place of occupation The toilet that is poorly ventilated, badly lighted, ill heated, in an unfavorable location and inadequate for the number using it, is not conducive to good habits, nor are the hurried breakfast, the morning rush, or conditions and regulations often met in the day's occupation The factor of time is important Establishing the habit of a regular bowel movement requires that sufficient time be allowed for it definitely at a period in the day's regime when there need be no feeling of haste

The Occupation and the Daily Regime

The hours of work, whether at school, or in the home, or in industry, will affect the diet by determining the times for meals, as well as the hours of sleep and the amount of leisure for recreation and other activities If the hours that a member of the family must follow, with respect to meal time, do not coincide with those of the rest of the household, some adjustment must be made in the home to guard against forming faulty food habits In school or industry, the facilities that exist for eating,—such as a dining room or equipment for heating food brought from home,—and the amount of time allowed, are factors in determining the type of lunch the individual will have, where and how much he will eat, and how rapidly and with what satisfaction For the patient on a therapeutic diet these problems are accentuated, and it is necessary to plan carefully for the meals eaten away from home The degree of activity that the occupation requires will determine the energy requirement, which must be fulfilled by food

Recreation

Physical fitness for play depends largely upon a proper food intake The desire for food is dependent in part upon a sense of well being, which in turn is influenced by the maintenance of a proper balance between activity and rest Recreation should be advantageous to health, stimulating the desire for food, but when it leads to overexcitability or overactivity, it is harmful Fatigue from such causes must be avoided, especially in the child, lest it affect the appetite and the body's utilization of food Further, there must be a proper balance between the physical activities of recreation and the food intake to maintain average body weight Food taken in larger amounts than are required for the body's activities will lead to overweight, while activity with less food than the body requires leads to underweight

INTERRELATIONSHIP OF FOOD AND MENTAL ATTITUDES

Various environmental factors have been discussed in terms of the physical aspects of their relation to food But the "impressionistic painting" which Dr Peabody has urged involves also an understanding of the patient in terms of his mental and emotional attitudes toward food "Not only must the basal physiological mechanism of the individual be thoroughly investigated, in addition all other factors involved in the personality must be reviewed, all relevant factors in the life situation must be scrutinized and evaluated "[4]

It is especially important to understand the mental life of the child and to help him develop right attitudes toward food, since it has been demonstrated that mental as well as physical habits are developed in childhood that affect the health status throughout the entire span of life

[4] Campbell Charles Macfie, *Human Personality and the Environment*, p 5, Macmillan Co, 1934

It would be simple if the deviation from the normal in food habits or in personal hygiene could be traced to a single causal factor Rarely can this be done Behavior in relation to food is often a matter of interplay between the physical and emotional life The motives may be hidden in a condition or a combination of circumstances seemingly unrelated or only indirectly related to food and consciously or unconsciously guarded by defensive attitudes that are difficult to penetrate

Eliot stated (1933)[5] that she could find no report of experimental or descriptive data in respect to the relationship between eating habits and personality traits There is evidence of increasing interest in this subject and many studies made by graduate students are now available However, there is need of much further research, and meanwhile the principles of psychology and psychiatry and the various other sciences basic in the field of mental hygiene must be relied upon for help in interpreting food in its significant social implications or in estimating rightly the influence of mental attitudes upon food habits

An understanding and appreciation of mental attitudes and social settings, when developing a dietary plan with the patient, will make for more intelligent coöperation with others who are participating in his treatment There must, of course be a differentiation between cases in which a few suggestions to the patient will solve the problem and those where a penetrating and systematic analysis of personality must be undertaken

The patient himself must be led to understand the problems that his situation presents, and the significance of his attitude toward food, to the end of developing in himself a sense of responsibility toward the solution of his difficulties, and a desire to follow a plan for an adequate diet

The Income and the Necessaries of Life in Relation to Mental Attitudes

When an inadequate income or loss of employment entails living conditions that are unsatisfactory, limits the outlay for food, for the home and household facilities and for clothing, and threatens the sense of security that the possession of savings gives,—these limitations in the physical environment often produce unhappy mental and emotional reactions Harassed with fear and worry over the future for himself and his family, frustrated in many ways, resentful, discouraged to the point of indifference, with loss of faith in the possibility of a better future, the patient can make but little effort to help himself in the plan for dietetic treatment "The stress of a psychological situation influences emotions, alters the direction of thought, modifies the code of values "[6] 'Why make a plan for me?' the patient will say "Where am I to get the food? What is the use of planning a diet when there is no money to pay for food?

The individual of independent spirit strives to maintain as long as possible the standards of living that are visible to the world,—those related to place of residence and type of clothing Only he and his family need know what food they are consuming and whether in adequate quantities From a feeling of pride or shame the child or adult may describe his diet not in terms of what he is eating but what

[5] Eliot Abigail *Eating Habits in Relation to Personality Development of Two and Three Year Old Children A Study of 69 Children in Two Nursery Schools* Genetic Psychology Monographs Vol XIII No 5 Clark University, Worcester, Mass, May 1933

[6] Campbell Charles Macfie *Human Personality and the Environment* p 5 Macmillan Co, 1934

he thinks his food habits should be, or with a hostility born of sensitiveness he may resent questions concerning his diet and begrudge giving information Such attitudes impede dietetic treatment, which cannot become effective until the patient can assume a more normal mental state and is willing to discuss his situation frankly

The young people of the family who go out to work acquire a feeling of independence because of the financial contribution they make to the household This may lead to greater cooperation in achieving and maintaining higher dietary standards with which the parents are in sympathy, but it may be a source of constant disturbance and dissension concerning money and ways of living The independent young girl often arouses conflicts in the family concerning her diet, when in her desire to maintain a certain weight she persists in food practices harmful to health

Nationality

Similarly racial customs and religious laws pertaining to food tend to exert an important influence on the emotional life There is a constant feeling of discontent in the elders, for example, when the home is not near the markets from which accustomed foods can be obtained Within the home, conflicts arise when the young people become critical or hostile and irreverent toward food customs cherished by their elders Sensitive concerning accustomed food habits and fearful that they will be misunderstood, a patient often becomes unhappily self conscious when describing his food intake, and may even deny certain food usages characteristic of his race In planning the diet with the patient who prefers his food prepared in the traditional ways, care must be taken to adhere to the accustomed foods or methods of preparation in order to avoid arousing disapproval, distrust or resentment

The use of certain foods is associated with religious and historical holidays, and the patient becomes unhappy at the thought of being restricted in his choice of food on such occasions This attitude changes to one of pleasure and interest in his diet when it is demonstrated by a display of foods that he need not feel set apart from his family at such times but can share in the feast without exceeding his diet (Part I, Chapter V)

In the social life without the home, food customs often cause unfavorable emotional reactions The patient may not like to eat with others than his own group, or out of loyalty to religious laws he may feel that he cannot eat where these are not observed He may be reluctant to display a lunch containing foods that are distinctive of his race or religion to a group whose food customs are different from his own A feeling of timidity, insecurity or resentment may be aroused in him, as in the case of other economic or social differences, and in self-defence he purchases a lunch that conforms to those of his companions, although it may be less desirable and more expensive than he can afford His choice of place for spending vacation periods may be limited by the same considerations

Language difficulties due to unfamiliarity with the language of the adopted country limit the patient's contacts and his understanding of practices other than his own These restrictions give rise to feelings of inferiority or frustration which often make for conflict in the family life In the clinic, when the patient does not understand directions and perhaps cannot make himself articulate, he again feels that he is being limited in the participation of what is of vital concern to him

It will be shown how, in the interests of developing a favorable attitude toward the diet and dietary directions, the patient is helped to overcome these difficulties of language, with their effects of confusion, antagonism futility, and the discouraging sense of being misunderstood (Part I, Chapter V)

Sleep and Rest

The quality of sleep and rest affect one's mental and emotional reactions to a considerable degree Often, it is not a dislike of food that is the disturbing factor in the behavior of the child who will not eat his meal, but irritability due to over activity or insufficient rest, or both, for these are among the primary causes of lack of appetite in both child and adult

Body Cleanliness

Even though body cleanliness may be no more than an aesthetic consideration, it induces the feeling of well being which in turn, is reflected in the enjoyment of food

With wise guidance, adaptation of facilities and the establishment of a daily regime the child can be led to develop proper habits of cleanliness as a matter of routine and to practice them contentedly and with pride But when the mother or adult resorts to nagging, struggle or punishment in training the child to habits of cleanliness, the unhappy mental state produced in the child may affect the appetite unfavorably, and is very likely to do so if the unpleasant situation occurs just before a meal time Moreover, in developing habits of cleanliness it is most unwise to use food as a means of discipline and so to invest it with unhappy associations

Bowel Elimination

Because of social taboos, an atmosphere of shame and false modesty has been created with respect to the processes of urination and bowel elimination In taking a nutritional history it usually becomes evident that in most family circles the correct names for the body parts and their functions are avoided, and names with little or no meaning are substituted to disguise reference to them This retards a proper understanding of these processes False standards are often created, and emotional disturbances are associated with the organs of excretion The patient develops an attitude of reserve, and even of shame, with regard to them, which is often inhibiting to the proper functioning of the body The dietary can hardly overcome these conditions

The Occupation and the Daily Regime

A lack of interest in or of a desire to follow a suggested dietary procedure or hygienic regime is often due to unhappiness in conditions of work An unpleasant situation faces the child at school or the worker at his trade, and mental or emotional disturbances are created that may manifest themselves in divers undesirable patterns of behavior Emotional distress may be expressed overtly, seemingly without relation to cause, *in the form of food dislikes* Often a food idiosyncrasy, an unwholesome attitude toward food can be traced to such deep lying causes They may represent an escape from an intolerable life situation And when these attitudes are carried into the home they may have a disturbing effect upon family food habits It is important, then, to know whether the child is reasonably successful and happy in his school life, in his work and in his friendships, whether the worker s position holds a promise for future advancement provides pleasant human relationships and compensation adequate to

maintain positive health, mental as well as physical [7]

The nervous breakdown of the housewife is likely to be due to maladjustment resulting from a sense of inferiority with regard to her work, which is often expressed in overanxiety, worry, discontent, imaginary illnesses, fear of disease, or a food dislike She may become indifferent to good dietary standards to the point of being indulgent to herself and her family, and cease to set an example with respect to an intelligent dietetic and hygienic regime

The child's life is regimented to a great extent by food The infant becomes aware, through hunger pangs, of his need of food, and derives contentment when that is satisfied The various factors that have already been considered as a part of the day's regime,—activity, habits with respect to sleep, play and body cleanliness,—all affect the child's attitude toward food The healthy, happy child, with good health habits, comes to his meal with a zest for food, and partakes of it in the same spirit in which he carries on the other activities of his day's work and play These desirable behavior patterns with respect to food must be carefully cultivated from earliest childhood, not only to satisfy nutritional needs but as a foundation for right attitudes towards food in later life

But there is another picture, well known, of the child who becomes resistant and resentful at the call to stop his play and "wash up" in preparation for meal time, or the child who indulges in food idiosyncrasies, and dawdles in eating perhaps daydreaming, making of the meal time a period when he can profitably act the dictator, or using it as a device for securing undue attention Under such conditions meal time awakens undesirable attitudes that provoke irritability, anger and unhappiness, with ill effects not only for the child himself but for the rest of the family

The meal time should be a means of developing a healthful attitude toward food Here, as in other situations, the child looks to the adult for an example of behavior as well as for encouragement, and the adult will often find in the child's attitude toward food a reflection of his own Modern health education is making of the school lunch, from the nursery school onward, a means for cultivating good food habits in an atmosphere of happiness and in a spirit of coöperation on the part of both child and adult

Recreation

For the adult and the child, recreation and play contribute to the feeling of well being, and there is usually greatest enjoyment of food after zestful activity But play or recreation may be a source of disappointment and unhappiness, due perhaps to lack of skill or to physical disability Often feelings of shame, jealousy, and timidity or insecurity as to status in the group are engendered, extending perhaps to underestimation of the ability for accomplishment in other fields and leading to withdrawal from social contacts Under these conditions undesirable personality traits develop that may become manifest in apparent inability to eat, or in refusal of food as a form of reprisal

Today there is happily a healthier tendency to enter into group play and recreation with the purpose of correcting or compensating for some deficiency, either physical or mental, and through new interests and associations to overcome self

[7] Stern, Frances The Nutritionist Looks at Mental Hygiene *Mental Hygiene*, Volume XIV No 1 January 1930

indulgence and whims, including food idiosyncrasies, and to pursue a normal life including a normal diet

In the use of the Nutritional History (Part I, Chapter 2), every-day situations such as these that have been suggested are scrutinized carefully Commonly looked upon as routine matters they are found to have definite relationship to food behavior Many other such factors than are referred to here would suggest themselves in the study of patients individually

Food is an integral part of the patient's life The pattern of his food behavior, good or poor, favorable or unfavorable to dietetic treatment, is the product of his background—his environment, training and reaction to experience Clearly, knowledge of his physical needs and of the foods that fulfill them is not sufficient, it is of greatest importance to understand the pattern of his food behavior in the light of social settings Always the distinctive food habit will be found to have a much deeper significance than appears on the surface It is symptomatic, conditioned by life situations When the Nutritional History records attitudes of resistance, resentment, or frustration, their cause must be found before they can be overcome It should be known for what purpose the patient is using food other than to satisfy normal needs and desires

For those who are engaged in the study and interpretation of human personality, herein lies opportunity to supply scientific data A closer correlation of the observations and findings of the various groups having a common interest in these studies should yield much of benefit in the treatment of the patient In applied dietetics this material would be of increasing importance

SUMMARY OF THE FACTORS OTHER THAN FOOD THAT INFLUENCE A DIET

Income and Expenditure The income controls the standard of living to so great an extent, that it must always be given due consideration in relation to the diet Because of the close interrelationship of the necessaries of life, it is essential to be aware of other demands which so often prevent the fulfilment of the body's needs for food

Nationality Racial stock, traditions and age old practices affecting the choice and preparation of food play a large part in determining the eating habits of the family and the individual

Education Language and mental capacity determine the method of teaching, and affect the ability of the person to learn the food values

Food Within and Outside the Home A lack of knowledge of ways of purchasing, storing and preparing food, and of food values conditions the feeding of the family The adequacy of the meal which is carried from the home or eaten in the restaurant will also depend on the thought given to the fulfilment of the body needs for the day as well as the amount of the income

Sleep and Rest Insufficient rest or sleep causes conditions such as fatigue and irritability that affect the appetite unfavorably

Body Cleanliness Body cleanliness is associated with good food habits and is important in the practice of preventive medicine

Bowel Elimination Proper habits of bowel elimination are related not only to the kinds and amounts of the food and fluid intake but also to such factors as the daily regime and the toilet facilities

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The child's life is regimented to a great extent by food. The infant becomes aware, through hunger pangs, of his need of food, and derives contentment when that is satisfied. The various factors that have already been considered as a part of the day's regime,—activity, habits with respect to sleep, play and body cleanliness,—all affect the child's attitude toward food. The healthy, happy child, with good health habits, comes to his meal with a zest for food, and partakes of it in the same spirit in which he carries on the other activities of his day's work and play. These desirable behavior patterns with respect to food must be carefully cultivated from earliest childhood, not only to satisfy nutritional needs but as a foundation for right attitudes towards food in later life.

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The meal time should be a means of developing a healthful attitude toward food. Here, as in other situations, the child looks to the adult for an example of behavior as well as for encouragement, and the adult will often find in the child's attitude toward food a reflection of his own. Modern health education is making of the school lunch, from the nursery school onward, a means for cultivating good food habits in an atmosphere of happiness and in a spirit of cooperation on the part of both child and adult.

Recreation

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Sleep and Rest Insufficient rest or sleep causes conditions such as fatigue and irritability that affect the appetite unfavorably

Body Cleanliness Body cleanliness is associated with good food habits and is important in the practice of preventive medicine

Bowel Elimination Proper habits of bowel elimination are related not only to the kinds and amounts of the food and fluid intake but also to such factors as the daily regime and the toilet facilities

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joyment of the diet by determining the times for meals as well as other activities

Recreation Physical fitness for play depends largely upon a proper food intake Activity should not result in excessive fatigue Recreation contributes to a feeling of well being and there is usually enjoyment of food after zestful activity

Interrelationship of Food and Mental Attitude The pattern of food habits is usually significant of certain mental attitudes influenced by life's situations which must be understood and taken into consideration when developing a dietary plan

CHAPTER 5

THE EDUCATION OF THE PATIENT ON THE NORMAL DIET

The fulfillment of the diet plan depends to a great extent upon the successful education of the patient in the principles underlying his diet These must be presented to him clearly and simply

GAINING THE CONFIDENCE AND CO OPERATION OF THE PATIENT

To obtain the comprehensive knowledge of the patient that is essential in teaching him in relation to his needs, it is important to have his confidence and coöperation, and these he will give in response to a kindly approach and sympathetic interest Helped further by an understanding of human relationships, one should be able, in taking the nutritional history (Part I, Chapter 2), to form the desired picture of the patient as a whole—his personality and intelligence level, his daily régime and environmental conditions

In discussing with him his special interests and leading him to talk freely of his daily life, friends and family, much helpful information can be secured without direct questioning One should be able to recognize the presence of inhibitions or disguised motives, as when the patient wishes to cover poverty or other unsatisfactory living conditions, for the information upon which the diet is based must be accurate or it will obstruct correct dietetic treatment

Furthermore the surroundings in which treatment is given will affect the patient s attitude Posters and pictures illustrating fruits, vegetables, the grains, or a principle of hygiene, by possessing artistic merit enhance interest in and the desirability of the health practices which they suggest The Russian samovar, the coffee pot of the Near East countries, the Italian pottery and other household objects, of artistic as well as of cultural value, are evidence to the foreign born patient that the crafts and customs of his native country are appreciated Pictures and other objects of interest can be chosen that besides being decorative will have definite value both for direct and indirect teaching

A room that is attractively decorated, and which gives opportunity for a private, unhurried conference in a quiet, friendly atmosphere will induce the patient to speak freely and frankly These desirable conditions can be provided in office and clinic, and will have the effect of stimulating the patient to greater co-operation in constructing the plan of his dietetic treatment

AROUSING AND SUSTAINING INTEREST

The patient must acquire the information that will enable him to carry out his diet at home intelligently and faithfully Moreover, he must be actuated to apply the knowledge he gains to the formation of desirable habits And on return visits, praise for progress, and encouragement in overcoming his difficulties, should help to sustain his interest and give him inspiration for successful accomplishment

In the following pages methods and means are presented for teaching the patient The extent and manner of using this material will depend upon the patient's intelligence level, his actual knowledge, what it is desired to accom-

plish in his behalf and the time that can be devoted to his *instruction* The teaching procedure described here follows logically the points considered in Part I, Chapter 2 However a different method does not preclude the use of the materials or suggestions given herein

APPROACH TO THE PATIENT

The *method of approach* to the patient will be determined by what is learned in conference with him

The content of necessary knowledge should be developed slowly with the average patient, to be certain that he is learning and applying the information gained So far as possible the patient's own knowledge and experience should be used, because it will give him a feeling of security to start from the known and gradually proceed to the unknown The process of his education will often extend over many visits, the points made being continually reemphasized and new ones advanced

Language difficulties, as with the patient who is foreign born, call for special aids in teaching, such as food models or food pictures, to help visualize the foods that may be used Books contain helpful pictures, and magazines and catalogs will furnish illustrations that can be pasted into a notebook for convenient reference Such illustrations help the patient to identify foods which, though familiar to him, he does not recognize by their names in the unknown language

When it is necessary to make use of an interpreter it is especially important to visualize directions as far as possible, so that the patient may understand them, at least in part, and not have to depend wholly on the interpreter

The *child and the mother* should, if possible, make the first visit together when the child is the patient, since the child is dependent on the home to supply his needs The conference with them should yield insight into the home conditions, the relation between mother and child and the child's relations to other members of the family, upon which so much of the ultimate success of the diet plan depends Both mother and child should understand the principles underlying the diet, and have a common interest, a unity of purpose, in fulfilling the requirements A spirit of domination on the part of either is to be deprecated Lest the child become introspective he should be helped to feel that he can participate as usual in the general family life

Methods of teaching the child should be adapted to his intelligence level Illustrative materials—pictures, games stories, handwork, experiments and exhibits that utilize the child's interests and experience—are of great value By these means, and in words that he can understand, the child can be taught the body's needs, the food constituents and how food serves the body,—just as the adult is taught them in more advanced terminology Helpful methods of teaching these principles have been evolved, with illustrative materials, in a series of lessons for children published under the title How to Teach Nutrition to Children[1]

Other members of the household upon whom the patient may be dependent for the preparation of his food should also be given directions at first hand rather than only through explanation by the patient

The patient is often asked to keep a record of what he eats, and it is desirable that he should have a special booklet to serve as a food diary (p 45) He will

[1] Pfaffmann and Stern, How to Teach Nutrition to Children M Barrows and Co, New York 1942

assign a greater importance to the diet when recorded in such form and will feel a keener desire to cooperate. While a record of this type will not be definite enough for exact computation of the diet, it will show the trend of the patient's

and vitamin D. The need of food for body building is illustrated by pictures of the skeleton with the foods that supply calcium, the circulatory system with the foods that supply iron, and the muscular system with the foods that supply protein.

THE BOSTON DISPENSARY
FOOD CLINIC

What I Eat

Name

Address

Date

TUESDAY	Health Habits
Breakfast	
Noon Meal	
Evening Meal	
Extras	

THE FOOD DIARY (Actual dimensions 5" x 3¾")

eating habits, and whether he understands his diet and is carrying it out.

CONFERENCE WITH THE PATIENT

The *relation of food to the body* is developed with the patient as the guiding consideration in planning and carrying out a diet. The patient is led to understand that food and the body are composed of like materials, and that the body builds itself by transference to itself of like materials from food. He learns the terms carbohydrate, protein, fat, calcium, phosphorus, iron, vitamin A, thiamine, riboflavin, niacin, ascorbic acid, The need of food to supply energy for activity is interpreted by pictures showing the body at work and play, and the foods that supply carbohydrate and fat. Likewise a picture showing the healthy, vigorous body and the foods that supply the various vitamins illustrates the need of selecting foods that promote health, vigor, and growth (p. 16).

Such pictures or charts help the patient to realize also that *certain foods—milk, for example—serve several body needs.* He will see this more clearly if the foods are arranged *in the same order in each* picture rather than in the order of their

PROTEIN
For growth muscle and repair




FAT
For energy to work and play




CARBOHYDRATE
STARCHES SUGARS
For energy to work and play

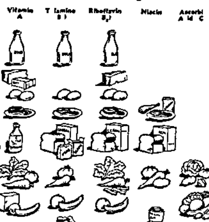



CALCIUM
For bones and teeth




VITAMINS
For growth health and vigor

Vitamin A | Thiamine B1 | Riboflavin B2 | Niacin | Ascorbic Acid C | Vitamin D

IRON
For blood




THE DAILY REQUIREMENTS OF THE BODY — ADULT AND CHILD

1 ounce=30 grams—1 milligram=1/1000 gram—1 microgram=1/1000 milligram—1 kilogram=1000 grams (2.2 lbs)

	Protein Grams	Fat Grams	Carbohydrate Grams	Calcium Grams	Iron Milligrams	Vitamin A I.U.	Thiamine Micrograms	Riboflavin Micrograms	Niacin Milligrams	Ascorbic Acid Milligrams	Vitamin D
ADULTS Moderate Activity											
Man (154 pounds) 70 kilograms	70	135	375	8	12	5000	1800	2700	18	75	—
Woman (134 pounds) 60 kilograms	60	111	312	8	12	5000	1500	2200	15	70	—
Pregnancy	85	101	312	1.5	15	6000	1800	2500	18	100	400-800
Lactation	100	122	375	2.0	15	8000	2300	3000	23	150	400-800
CHILDREN											
Under 1 year				1.0	6	1500	400	600	4	30	400-800
1-3 years	40	49	150	1.0	7	2000	600	900	6	35	—
4-6 years	50	66	200	1.0	8	2500	800	1200	8	50	—
7-9 years	60	84	250	1.0	10	3500	1000	1500	10	60	—
10-12 years	70	107	312	1.0	12	4500	1200	1800	12	75	—
GIRLS											
13-15 years	80	120	350	1.3	15	5000	1400	2000	14	80	—
16-20 years	75	100	300	1.0	15	5000	1200	1800	12	80	—
BOYS											
13-15 years	85	140	400	1.4	15	5000	1600	2400	16	90	—
16-20 years	100	166	475	1.4	15	6000	2000	3000	20	100	—

Adapted from recommendations of the Food and Nutrition Board of the National Research Council

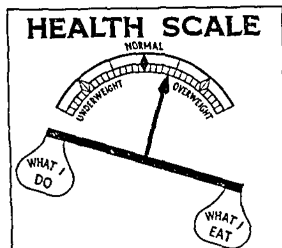
FOOD CONSTITUENTS	AMOUNTS PER DAY PER KILOGRAM OF BODY WEIGHT ADULT	CHILD
Protein	⅔ to 1½ gram	2 to 3 grams
Fat	1 to 2 gram	2 to 3 grams
Carbohydrate	4 to 6 gram	6 to 10 gram

FEED YOUR BODY TO PROTECT YOUR HEALTH

Notice the relation between the body and food, the same substances are in both

relative values as sources of the various food constituents (See illustration, p 46)

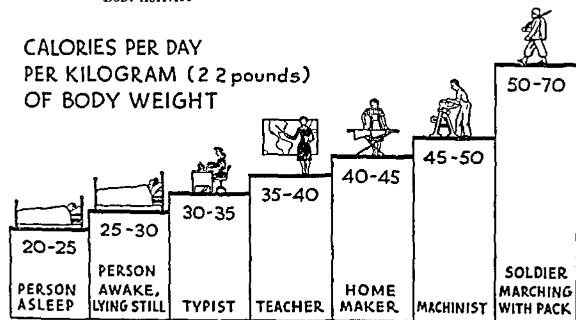
The *balance between the food intake and body needs for activity* is demonstrated



THE BALANCE BETWEEN THE FOOD INTAKE AND BODY ACTIVITY

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The *choice of foods to fulfill body needs* requires that the patient shall be able to



ENERGY OUTPUT CHANGES DUE TO INCREASING MUSCULAR ACTIVITIES

The patient is led to see that a certain balance must be maintained between the food required to fulfill the body's energy needs and the food intake He sees that when the activity of the body is increased, the food intake must be increased to evaluate foods as to their various contributions to the body

The protective diet, which has been described (Part I, Chapter 2), may be used as the basis for teaching the patient the foods that he should choose daily in

PROTEIN

For growth, muscle and repair





FAT

For energy to work and play





CARBOHYDRATE

STARCHES-SUGARS

For energy to work and play





CALCIUM

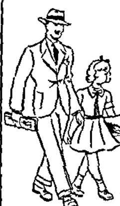
For bones and teeth

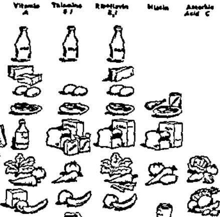




VITAMINS

For growth health and vigor





IRON

For blood





THE DAILY REQUIREMENTS OF THE BODY — ADULT AND CHILD*

1 ounce = 30 grams — 1 milligram = 1/1000 gram — 1 microgram = 1/1000 milligram — 1 kilogram = 1000 grams (2.2 lbs)

	Protein Grams	Fat Grams	Carbohydrates Grams	Calcium Grams	Iron Milligrams	Vitamin A I U	Thiamine Micrograms	Riboflavin Micrograms	Niacin Milligrams	Ascorbic Acid Milligrams	Vitamin D
ADULTS Moderate Activity											
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Woman (134 pounds or 60 kilograms)	60	111	312	8	12	5000	1500	2200	15	70	—
Pregnancy	85	101	312	1 5	15	6000	1800	2500	18	100	400-800
Lactation	100	122	375	2 0	15	8000	2300	3000	23	150	400-800
CHILDREN											
Under 1 year				1 0	6	1500	400	600	4	30	400-800
1 3 years	40	49	150	1 0	7	2000	600	900	6	35	—
4 6 years	50	66	200	1 0	8	2500	800	1200	8	50	—
7 9 years	60	84	250	1 0	10	3500	1000	1500	10	60	—
10 12 years	70	107	312	1 0	12	4500	1200	1800	12	75	—
GIRLS											
13 15 years	80	120	350	1 3	15	5000	1400	2000	14	80	—
16 20 years	75	100	300	1 0	15	5000	1200	1800	12	80	—
BOYS											
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Adapted from recommendations of the Food and Nutrition Board of the National Research Council

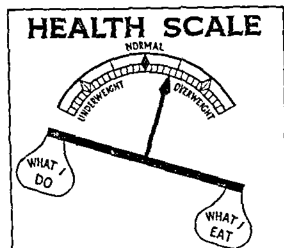
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Fat	1 to 2 grams	2 to 3 grams
Carbohydrate	4 to 6 grams	6 to 10 grams

Feed Your Body to Protect Your Health

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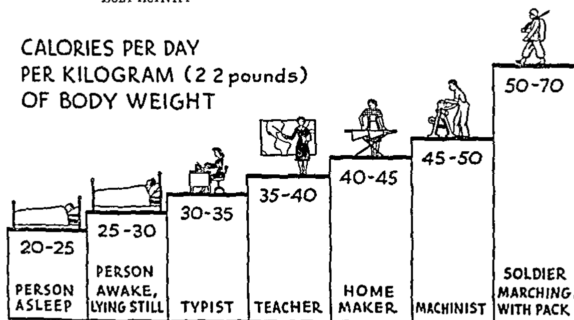
The *balance between the food intake and body needs for activity* is demonstrated



THE BALANCE BETWEEN THE FOOD INTAKE AND BODY ACTIVITY

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For growth muscle and repair

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For energy to work and play

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STARCHES SUGARS
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ADULTS Mod t Act ty											
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Lactatio	100	122	375	2 0	15	8000	2300	3000	23	150	400-
CHILDREN											
U d 1 y				1 0	6	1500	400	600	4	30	400-
1 3 y rs	40	49	150	1 0	7	2000	600	900	6	35	—
4 6 y rs	50	66	200	1 0	8	2500	800	1200	8	50	—
7 9 y rs	60	84	250	1 0	10	3500	1000	1500	10	60	—
10 12 y	70	107	312	1 0	12	4500	1200	1800	12	75	—
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BOYS											
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Ad pted f m mm dations f he Food d N io Board f the Natio al Research Council

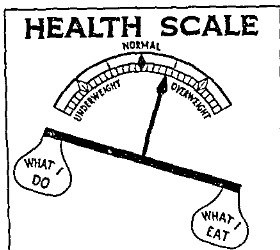
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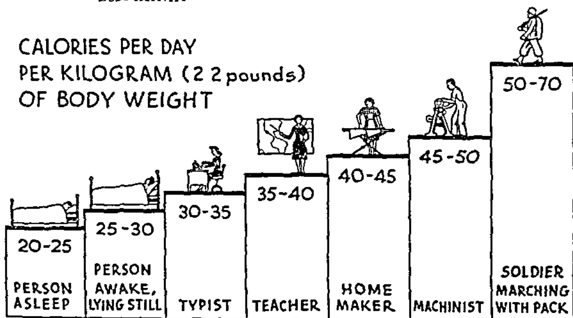
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MILK 4 gl e ry d y fo th h ld / 2 gl es ry d y for th d lt

1 GLASS OF MILK GIVES

Protein (mpl)	f growth m scl d p	8 g m
F	f gy to wo k d pl y	10 g m
Carbohydra	f gy o w k d pl y	1 gr m
Calci m	f bo es d tee h	.33 g m
Iro	f healthy blood	5 m ll gr m
V tam A	f h lth growth and go	461 I T U
Thiam		125 m g m
Ribofl		523 m rog m
Niacin		.2 m ll g m

LEGUMES D d b pe fe ill pe t

2 TABLESPOONS LEGUMES DRIED GIVE ABOUT

Pro ei (ompl	— suppl m t w h mpl pro in) f grow h m scle d p	7 g
Carbohyd	f ne gy work d pl y	18 g
Cal m	f bo es d ee h	.004 gr m
Iro	f h l hy blood	3 1 m ll gr
Th m n	f h l h gro th d go	153 m rograms
R bofl		98 mi rog ams
Nia		.85 m lligram

CHEESE Am i a (Ch dd) Ch se

1 OUNCE OF AMERICAN CHEESE GIVES

Protein (ompl te)	for grow h m scl d rep	7 g m
F t	for gy t work d play	10 g m
Calci m	f bo d ee h	.279 g m
Iron	f h al hy blood	.3 m ll g m
V min A	f h l h grow h d g	450 I er T L ts
Thiamin		7 m g m
Ribofl		165 m g m
Nia in		.06 m ll g m

BREAD A l t3 l f wh l g l h d b ead ry d
CEREAL Wh l g e i h d l t l ton a d y

1 SLICE OF BREAD OR 1 SAUCE DISH OF CEREAL GIVES ABOUT

P ei (compl	— ppl m w h mplet p in) for gr w h m scl d rep	3 grams
Ca bohyd te	f ne gy to w k d pl y	15 g ms
Calci m	for bo es d tee h	.015 gr m
Iron	for heal hy blood	.6 m gram
Thi m	f h l h g owth d g r	96 m rog ms
R bofl		54 microgr ms
N		.6 m ll g am

CHEESE Cott g Cheese (kim m lk)

1 OUNCE OF COTTAGE CHEESE GIVES

Pro in (mpl)	f g owth m scl d p	6 g m
Calci m	f bo es d ee h	0 5 g m
Iro	for h althy blood	.1 M ll g m
V tamin A	f h l h growth d go	53 I te io I U
R bofl		84 m g m

VEGETABLES At le t 2 serv g ry d y F safety includ e y llow eget bl wh ch t m s d m e l

1 SAUCE DISH OF THESE VEGETABLES GIVES

		C	String	T
Pro	(compl te— ppl men w h mpl te p) l g wh m t nd pa	1	3	1 grams
Ca bohyd te	f ne gy w k nd pla	10	8	4 gr ms
Cal m	f b es nd ee h	.045	.065	.007 gr m
Iro	fo h l hy blood	.6	1 4	.6 m lligram
V mi A	f h l h growth d gor	6000	1000	1000 I m I U
Th amin		100	75	75 m rogra
Ribofl		90	110	45 m crogra
Nia		1 47	.64	58 mill gra
Asc rb A d		4	25	22 m lligram

EGG O p l bly ry d y

1 EGG GIVES

Pro in (compl)	f g w h m l nd pa	7 g am
F	f ergy work d pl y	5 gram
Cal um	f b es d h	0 7 g m
Iron	f h lthy blood	1 5 m ll g m
V min A	for h l h g ow h d g	500 I er I U
Th min		75 m gram
Ribofl		125 m g m
Nia in		.03 m ll g m

POTATO O e P t t E ry D y

1 LARGE WHITE POTATO GIVES

P ot (mpl	— ppl m w h mpl te p) f grow h m l nd p	4 g m
Carbohydra	f gy to w k nd pl y	38 gr ms
C l m	f bo es and eeth	.0 2 gram
I	f h l hy blood	2 6 m ll gram
V m A	f heal h gr w h d go	60 I ern I U
Th m		200 m rogr ms
R b fl		80 mic g
N		2.36 m g
Asc b A id		20 m g

MEAT 1 rv g f f th e ry d y

4 OUNCES OF MEAT GIVES ABOUT

Protein (mpl)	f gr w h m l d p	20 g m
F	f ergy w k d pl y	26 g m
Calci m	f bone d h	012 g m
Iro	f h l hy blood	2 8 m ll g m
Thi m	f h l h grow h d g	180 microgr m
R bofl		240 m g m
N		9 44 m ll g m

If f y fi h sed f be dd d to h d t

FRUIT At l st 2 rv g y d y F f ry i l d t m t h it f t oply g rbic d

1 SERVING OF THESE FRUITS GIVES

		O	A	Ban
C bohyd	f gy w k d pl y	13	14	24 gr
Cal m	f bo d h	.0 4	.007	.008 g
Iron	f h l hy blood	4	4	.6 ll g
V m A	f h l h gr h d g	225	7	350 I er IL
Th m		110	40	50 m rogram
R bofl		50	30	76 m rogram
Nia		.22	53	.62 mill gram
Ascorb A id		54	6	5 m lligrams

BUTTER At l t 3 le l t boo d y (h y p d w k)

3 TEASPOONS OF BUTTER FORTIFIED OLEOMARGARINE GIVES ABOUT

F	for gy to work d pl y	12 gr m
V m A	for h l h g w h nd g	405 I rn I U

CREAM Light Cre m

CUP LIGHT CREAM GIVES

Pro in (mpl)	f grow h m scl d p	4 gr m
Fat	f gy w k d pl y	24 g ms
C bohyd	f ergy w k d pl y	6 gram
Calcium	f bo es d eeth	112 g m
Iro	f h al hy blood	.2 mill g m
V min A	f h l h g w h d g	1416 I T U
Th m		40 m rogram
R bofl in		200 m rogram

SUGAR 6 le t pe y d y (Y po d week)

3 TEASPOONS OF SUGAR GIVE

Ca bohyd	f gy to w k d pl y	15 gram

FATS—Other Sources 3 t po d y f th hild / 6 t po d y f th ad lt

6 TEASPOONS OF THESE FATS GIVE ABOUT

F	for energy to w k d pl y	15 g ms

MOLASSES 3 TEASPOONS OF MOLASSES GIVE

Carbohyd	f en gy to work and pl y	10 grams
Cal m	for bones d teeth	.007 g m
I	for h l hy blood	2.8 mill grams

Suggested Kinds and Amounts of Food Needed per Day—Equivalents May Be Used

his diet to insure adequacy The patient may be given a written or printed list of the foods included in it,—milk, eggs, meat, butter, fruit, vegetables, whole grain or enriched bread and cereals, and sugars It should state the food constituents each food contains, how each helps to protect the health of the body and the amounts of each necessary to help to insure protection Or the foods may be illustrated with pictures accompanied with statements of the amounts of the various foods necessary for the protection of the body, and the functions of each food (p 48)

Sometimes a patient is able, when given a list of the food values of the various foods in terms of average servings, to compute his diet in grams of food necessary to meet the food prescription (Table 15) However, in most cases the diet must be computed for the patient and the results given to him in terms of servings of food It is sometimes found, in talking with the patient that his usual food intake does not contain certain foods necessary for the adequacy of the diet, —perhaps because they are not customary, or are unfamiliar or too expensive, or because he dislikes them He should be helped to realize the contribution these foods make to the diet so that he will be willing to include them Food likes and dislikes as molded by family or religious customs also influence the choice of food and the food intake

The *cost* of food is a restricting factor, and when food money is limited or seems not to be wisely spent, the patient should be helped to see how he can plan more judiciously his expenditures for food To this end, he may be asked to keep a week's record of the kinds and amounts of food he purchases, with the costs A special form for this purpose, arranged to show the patient what to record, is advisable and will impress him with the importance of keeping the record accurately (pp 50–51)

The money that the patient's income will allow him to spend for food must be known, for upon this will depend to a certain extent the choice of food for the diet The amount of money available must be considered in relation to the number of people for whom it must provide, for although in itself it may seem a large sum, when divided among the number in the family the allowance per person may be inadequate

To help the patient to plan his food purchases in terms of the kinds and amounts of food that he needs, the various factors that influence the prices of food should be known, such as the quality of the food, the quantity to be purchased and whether to purchase in bulk or in package, the existing market prices and the seasonal variations in price

Planning the best expenditure of the food money cannot be accomplished in one conference with the patient or the person who plans and purchases for the household, but usually requires several conferences The extent to which the patient can be so helped will depend upon his intelligence, the coöperation given by himself and his family and the amount of money available—for below a certain level of cost an adequate diet cannot be purchased

The chart on page 52 will be a helpful guide in ensuring the purchase of an adequate diet at minimum cost

The *composition* of a food, or what it contains for body needs, should be considered along with its cost,—and that is the conception which the patient should learn to hold in order to secure the greatest value for money expended Often,

FORM FOR PATIENT TO RECORD THE WEEK'S EXPENDITURES FOR FOOD AND FOR OTHER NECESSARIES OF LIFE

Name How many adults in family? How many children?

Amount and Cost of Food for the Family

Food	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Total Cost
Milk								
Cheese								
Egg								
Meat								
Fish								
Dried peas and beans								
Butter								
Other fats								
Peanut butter								
Fruit, citrus other fresh dried								
Vegetables, leafy root others								
Potatoes								
Bread whole grain white (enriched) Flour Crackers whole grain white Cereals whole grain white (enriched)								
Sugar brown white								
Molasses Other sweets								
Beverages cocoa coffee tea								
Seasonings, Condiments Yeast Baking powder								

FORM FOR PATIENT TO RECORD THE WEEK'S EXPENDITURES—*Continued*

FOOD MONEY

Name ________________ B D # ________

Address ________________

Date

S S in B D

S S outside

Nationality

Family	Adults	No	Sex	Age	Occupation	Income
	Children					

INCOME

EXPENDITURES	WKLY
Rent	
Light and Heat	
Electricity	
Gas	
Coal	
Wood	
Clothing	
Insurance	
Carfare	
Laundry	
Ice	
Cleaning Materials	
Church	
Extras	
Total	
FOOD	
GRAND TOTAL	

FM #47

to this end, it is necessary to take time to discuss with him the various food groups and their food values

Milk, on which so much emphasis is placed, is often considered expensive But when the patient sees, from the pictures of the body systems with the foods necessary for their maintenance and health (p 46), that milk provides more food constituents than any other single food, he realizes that for its cost he gets a very high return in food values He

FOOD FOR YOUR FAMILY TO PROTECT HEALTH—ADEQUATE DIET AT MINIMUM COST

Based on the Dietary Recommendations of the Bureau of Home Economics, U S Department of Agriculture, Circular 296

For One Week	Child Under 4 Years	Boy 4 6 Girl 4-7	Boy 7 8 Girl 8 10	Boy 9-10 Girl 11 13	Boy 11 12 Girl Over 13	Boy 13-15	Boy Over 15	Woman Moderately Active	Woman Very Active	Man Moderately Active	Man Very Active	Food for Your Family for One Week	Cost for One Week
Milk[1]	7 quarts	7 quarts	7 quarts	7 quarts	7 quarts	7 quarts	7 quarts	3½ quarts	3½ quarts	3½ quarts	3½ quarts		
Cheese	2 oz †	2 oz	2 oz	2 oz	2 oz	4 oz	4 oz	4 oz	4 oz	4 oz	4 oz		
Eggs (number)	5	5	5	4	4	3	3	4	3	3	3		
Meat Fish		3 oz 1 oz } 4 oz	10 oz 2 oz } 12 oz	13 oz 3 oz } 1 lb	1 lb 4 oz } 1 lb 4 oz	1 lb 4 oz } 1 lb 4 oz	20 oz 4 oz } 1 lb 8 oz	1 lb 4 oz } 1 lb 4 oz	1 lb 4 oz } 1 lb 4 oz	20 oz 4 oz } 1 lb 8 oz	26 oz 6 oz } 2 lbs		
Dried peas beans etc		2 oz	5 oz	5 oz	6 oz	7 oz	7 oz	6 oz	7 oz	11 oz	14 oz		
Butter Other fats Peanut butter	1¼ oz 1¼ oz ½ oz } 3 oz	3 oz 2 oz 1 oz } 6 oz	4 oz 6 oz 1 oz } 11 oz	4 oz 8 oz 1 oz } 13 oz	4 oz 8 oz 1 oz } 13 oz	4 oz 15 oz 1 oz } 1 lb 4 oz	4 oz 15 oz 1 oz } 1 lb 4 oz	4 oz 8 oz 1 oz } 13 oz	4 oz 15 oz 1 oz } 1 lb 4 oz	4 oz 15 oz 1 oz } 1 lb 4 oz	4 oz 20 oz 2 oz } 1 lb 10 oz		
Fruit—Citrus Other fresh Dried	1 lb 8 oz 1 oz } 1 lb ‡ 9 oz	1 lb 12 oz 2 oz } 1 lb 14 oz	1 lb 18 oz 3 oz } 2 lbs 5 oz	1 lb 1 lb 5 oz } 2 lbs 5 oz	1 lb 14 oz 6 oz } 2 lbs 4 oz	1 lb 12 oz 8 oz } 2 lbs 4 oz	1 lb 1 lb 6 oz } 2 lbs 6 oz	1 lb 14 oz 6 oz } 2 lbs 4 oz	1 lb 12 oz 8 oz } 2 lbs 4 oz	1 lb 1 lb 8 oz } 2 lbs 8 oz	1 lb 1 lb 6 oz } 2 lbs 6 oz		
Vegetables—Leafy Root Others	6¾ oz 13½ oz } 1 lb 4 oz	7¼ oz 11¾ oz } 1 lb 3 oz	14 oz 30 oz } 2 lbs 12 oz	16¼ oz 27¾ oz } 2 lbs 12 oz	15 oz 31 oz } 2 lbs 14 oz	24 oz 20 oz } 2 lbs 12 oz	17 oz 23 oz } 2 lbs 8 oz	15 oz 31 oz } 2 lbs 14 oz	24 oz 20 oz } 2 lbs 12 oz	11½ oz 28½ oz } 2 lbs 8 oz	13½ oz 18½ oz } 2 lbs		
Potatoes	2 lbs	2 lbs	2 lbs 8 oz	2 lbs 12 oz	2 lbs 12 oz	3 lbs	4 lbs 4 oz	2 lbs 12 oz	3 lbs	3 lbs	5 lbs 12 oz		
Bread—Whole grain§ White Flour Crackers—Whole grain White Cereal—Whole grain White	9 oz 1 oz 2 oz 6 oz 2 oz } 1 lb 4 oz	13 oz 1 oz 3 oz 7 oz 4 oz } 1 lb 12 oz	32 oz 1 oz 5 oz 7 oz 3 oz } 3 lbs	33 oz 1 oz 5 oz 11 oz 6 oz } 3 lbs 8 oz	31 oz 2 oz 10 oz 11 oz 6 oz } 3 lbs 12 oz	35 oz 2 oz 11 oz 14 oz 10 oz } 4 lbs 8 oz	58 oz 2 oz 13 oz 14 oz 17 oz } 6 lbs 8 oz	31 oz 2 oz 10 oz 11 oz 6 oz } 3 lbs 12 oz	35 oz 2 oz 11 oz 14 oz 10 oz } 4 lbs 8 oz	35 oz 2 oz 11 oz 14 oz 10 oz } 4 lbs 8 oz	74 oz 3 oz 16 oz 24 oz 19 oz } 8 lbs 8 oz		
Sugar—Brown White Molasses Jelly	½ oz 1 oz ½ oz } 2 oz	1¼ oz 1¼ oz ½ oz } 3 oz	4 oz 5 oz 1 oz } 10 oz	6 oz 5 oz 1 oz } 12 oz	6 oz 5 oz 1 oz } 12 oz	8 oz 6 oz 2 oz } 1 lb	8 oz 6 oz 2 oz } 1 lb	6 oz 5 oz 1 oz } 12 oz	8 oz 6 oz 2 oz } 1 lb	10 oz 6 oz 2 oz } 1 lb 2 oz	10 oz 8 oz 2 oz } 1 lb 4 oz		
Beverages—Cocoa	¼ oz	¼ oz	¼ oz	¼ oz	¼ oz	¼ oz	¼ oz	¼ oz	¼ oz	¼ oz	¼ oz		
Coffee								8 oz	8 oz	8 oz	8 oz		
Tea								½ oz	½ oz	½ oz	½ oz		
Seasoning Condiments Yeast baking powder													

The f llowi g are about *equal in food alue*
1 qt flu d whole m lk
17 oz vaporat d m lk (1 tall can holds 14½ oz)
5 oz Am r can hees (Cheddar)

† oz —ounc
‡ lb —p und
16 ounces = 1 pound
§ 1 average 1 e b ead = 1 o

D ect on { F nd the ages and ex wh ch are the same as the m mbe of you fam ly
Add tog th th e same k nd of food fo each m mbe of yo fam ly
Place th total amo nt needed fo you fam ly in th e pace ma ked Food for you Fam ly fo One Week
Figu e the co t of this food fo yo family w th *local re ent pri*

can be shown also the amounts of other foods it would be necessary to use to secure the various food constituents in the amounts supplied by a cup of milk As a source of calcium, for example, he is shown that except for cheese there is no practical substitute for milk, that to provide the amount of calcium that is contained in a cup of milk, $4\frac{1}{2}$ pounds of meat would be required, or exceedingly large amounts of vegetables (Table 30) Similarly, milk is shown to be a good source of phosphorus, a cup giving as much as one ounce of cheese, or two eggs, or four ounces of meat (Table 32), but not so good a source of iron, since a pint of milk would be required to supply the amount of iron contained in an ounce of meat, and over a pint to supply the amount of iron in one egg (Table 35) Moreover, it is demonstrated that a cup of milk contains protein in an amount

Protein Foods	Household Measure	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
		Grams	Grams	Grams	Milligrams	Milligrams	Micrograms	Micrograms	Micrograms	Milligrams	Milligrams
Milk	1 glass	8	9 5	12	283	5	461	125	523	22	3
Cheese American	1 ounce	7	10	1	279	3	450	7	165	06	
Egg	1	7	5		27	1 5	500	75	125	03	
Meat	1 ounce	6 5	2 5		4	9		48	69	2 23	
Fish (non fatty)	1 ounce	5			5	3		5	60	1 80	

equal to that in one ounce of meat or fish, or poultry, or cheese, or in one egg, besides giving extra fat (Table 25), and in carbohydrate, one cup of milk approximates one medium orange, or two crackers or one thin slice of bread (Tables 21 and 24) Also, various foods are shown that contain the vitamins in about the same relative amounts as milk (Tables 41-45)

Thus the patient sees that even though a food is an expensive source of a particular food constituent, it may be economical as a source of another, and thereby justify its purchase He *recognizes that a* food must be evaluated with reference to all of its food constituents, that milk, for example, is expensive if considered with reference only to its content of iron, yet has such liberal amounts of calcium, phosphorus, protein and vitamin A, thiamine, riboflavin, niacin, and increased vitamin D in vitamin D milk, and contributes to so many body needs that it is, in fact, an economical food He is shown that when the bread and cereal he uses with milk are whole grain or enriched products, they will supply iron at a low cost

In the following chart foods are listed that are approximately equivalent to milk in protein, and they can be compared to milk with respect also to their content of other food constituents

Cheese is usually inexpensive and can be used satisfactorily as a main dish because it can be so readily combined with cereals and other foods The patient learns, by means of the chart, pp 46, 48 that it is a rich source of calcium as well as of phosphorus protein, fat and vitamin A, and that it can be combined, to the satisfaction of the appetite, with a food which will supply the carbohydrate it lacks

The *egg* is shown under each food con

stituent except carbohydrate, in the illustration, p 46 In this way the patient appreciates its significance in the diet it is a good source of protein, fat, phosphorus and iron, and supplies vitamins A, and D, thiamine and riboflavin Here again the patient will learn to compare the egg with other foods equivalent in food value, and to consider the cost in terms of seasonal variation and the quality or grade of the product

Meat and meat substitutes are almost always found to be included in the patient's food intake, for meat in particular is generally desired

It is demonstrated to the patient, as in the preceding discussion of milk, that an ounce of meat, fish, poultry or cheese, or one egg contain approximately equivalent amounts of protein (p 53) Thus he realizes, through visual presentation, that he has a goodly range of sources of protein from which to select, and that when his money for food requires the choice of one of the cheaper sources he is still satisfying body needs

He learns that meat is also a good source of phosphorus and iron, and that it adds fat in varying amounts that with respect to the vitamins it can be considered a source of thiamine, riboflavin and niacin While the average serving of fish is equivalent in protein—and only slightly less so in phosphorus—to the average serving of meat, it is lower in fat and iron

Butter is an important source of vitamin A, as well as of fat The margarines that are now fortified with vitamin A make them of approximately equal food value However, the vegetable oils, such as olive oil, do not carry vitamin A

Vegetables and fruits are frequently used in minimum amounts and even omitted from the diet as the patient considers them expensive and of little food value Again, the pictures of the body systems with the foods that supply their needs, in which vegetables and fruits appear so frequently, will show the patient that for their rich and various contributions to the body these foods are not expensive He learns that they contain varying but appreciable amounts of carbohydrate, minerals and vitamins When the cost of the diet must be kept low, the vegetables and fruits that are the cheaper sources of the food constituents are stressed For example, to ensure adequate amounts of ascorbic acid in the diet, oranges or other citrus fruits, tomatoes, or raw or leafy vegetables must be taken daily, the choice being made according to the cost—oranges when they are cheap, fresh tomatoes and cabbage in season and canned tomatoes when fresh foods are expensive (Tables 28 to 45)

The discussion of fruit provides an excellent opportunity to demonstrate the place of candy in the diet, especially to the child He is shown that the candy usually eaten can score only one point in its favor,—it provides energy for the body, whereas fruit scores several points in that it is not only a source of energy but in addition provides minerals and vitamins necessary for the protection of health It is especially important to stress these facts to the patient whose diet is apt to be lacking in minerals and vitamins, either because of faulty food habits or for economic reasons It often appeals to the child to show him in terms of food values what he receives for his pennies spent for candy and those spent for fruit—such as the orange, or banana or apple

The more desirable types of candy, those made with dried fruits, nuts and molasses may be emphasized by giving the patient recipes for making them The appeal of these, especially to the child, may be increased by putting the

recipes into booklets with attractive covers Samples of such candies may be given, and this affords an excellent opportunity for stressing the time at which candy may best be eaten—after the meal so that it will not interfere with the appetite The preparation and distribution of these "healthful sweets" in attractive containers at the holiday season adds to the festive spirit and helps to interest the child so that the recipes will be tried at home[2]

Legumes or seed vegetables are so frequently used in the low cost diet that emphasis is placed on the importance of combining them with a food that is a source of complete protein, such as milk, cheese, egg or meat, to make a satisfactory meat substitute It is demonstrated that they contain rich amounts of carbohydrate, phosphorus iron, thiamine and riboflavin, but only incomplete protein (except for the soy bean), and no fat,—which doubtless accounts for their being combined with a food of high fat content in many traditional dishes

Bread, *cereals*, crackers, and flour are the forms in which the patient knows the grains He is shown the different kinds of grains that are generally used—wheat, oats, rice rye, barley and buckwheat—and their contributions to the body are explained and illustrated Both adult and child are interested in a discussion of the seed of the grain By means of diagrams and other devices, the patient is *shown how the different layers of the seed* may be removed in the process of milling (p 56) The whole grain products represent more nearly the entire content of the seed and contribute minerals and vitamins that are lacking in the refined products The white inner part of the seed is used for white flour and white breads and cereals—products which are mostly starch and lacking in vitamins and minerals At the suggestion of the government, manufacturers now add iron, thiamine and niacin to these products so that they now approach the food value of the natural product Thus the patient is led to see the advantage to the body of using the whole grain or enriched products

When the price of *potatoes* is high, many people use macaroni or white rice instead The patient is shown that these are not comparable in food value because macaroni and white rice lack the minerals and vitamins which the potato supplies unless they have been fortified as described above, although they contain approximately the same amount of carbohydrate

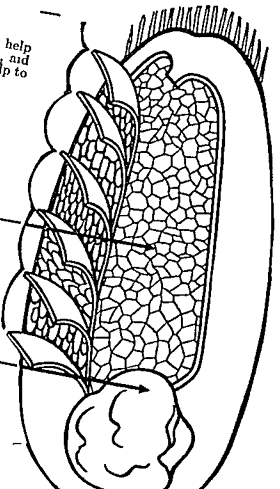
The *protective diet* (Part I, Chapter 2, p 6) is now better understood by the patient as to the completeness of its contribution to body needs He realizes the significance of the word "protective," and that the prominence is given, rightly, to milk, eggs, meat, butter, vegetables, fruits, and whole grain or enriched products That the normal diet is a protective diet can be impressed upon the patient's mind in the form of a game, by listing on graph paper, or on paper similarly ruled, the foods contained in the normal diet, with headings for the various food constituents, and checking, either with a mark or drawings or miniature pictures of the foods, the constituents that each food contributes[3]

The patient sees that the protective diet is a guide to the selection of foods to fulfill the body's needs If in following it he chooses the cheaper cuts of meats or the meat substitutes, and the cheaper fruits and vegetables when they provide

[2] How to Teach Nutrition to Children Chapter IX— Healthful Sweets

[3] See booklet and chart prepared by the Boston Dispensary Food Clinic for the Maltex Co Burlington Vermont

Diagram of Whole Grain



BRAN The husk and brown layers rich in	iron	for healthy blood
	phosphorus	for bones and teeth
	protein (incomplete)	for growth muscle and repair*
	thiamine	to help keep the nerves healthy help growth stimulate the appetite, aid the regular bowel movement help to burn carbohydrate
ENDOSPERM The white center of the wheat berry composed of	carbohydrate (starch)	for energy
	protein (incomplete)	for growth muscle and repair*
GERM The plant germ or embryo, the part which sprouts when the wheat berry is planted A valuable source of	protein (incomplete)	for growth muscle and repair*
	thiamine	to help keep the nerves healthy help growth, stimulate the appetite aid the regular bowel movement, help to burn carbohydrate
	riboflavin	promotes growth helps to keep skin healthy helps eyesight essential to functioning of every body cell
	niacin	helps growth prevents pellagra keeps skin and other tissues healthy

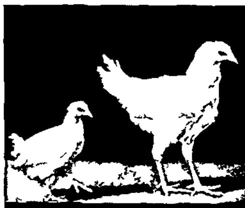
* When supplemented by a complete protein

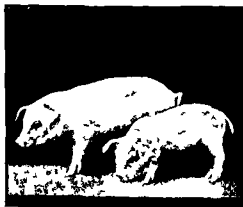
the desired food values, he will have an adequate diet at minimum cost

Individual taste may lead the patient to omit certain foods from his diet because they are strange, or because he is not accustomed to them or dislikes them. If they are essential to the adequacy of the diet, *the omission cannot be disregarded*. The reason for the omission, whether due to a mental attitude, a physical condition or a social or economic factor, should be ascertained. If the food is unfamiliar or not customary a sample of it is shown, and frequently the patient tastes of it in the clinic or *takes a sample to use at home*, with suggestions for ways of preparing it and including it in his diet. If the name of the food is new to the patient or difficult to spell or pronounce it is written for him and pronounced repeatedly. Knowledge of the contribution that the food *makes to the body's needs and pictures* that illustrate the food constituents it contains will help him to realize its value. Pictures of healthy animals on a satisfactory diet in contrast with others suffering from diets deficient in the necessary food constituents will illustrate for him the ill effects upon health when certain of these food constituents are not present in the diet (p. 57–58). Suggestions for new ways of preparing the food disliked are helpful and the patient may gradually lose his distaste for a food if it is served at first in small amounts. If a *food is disliked because of some unpleasant association* with it the patient is helped to overcome the effects of this association and here much help can be given by the psychiatrist (Part I Chapter 4).

Nationality race and religion are important factors in *determining food likes* and dislikes and the customs and food habits of the family. To work intelligently with people of foreign birth or their immediate descendants and to win their confidence and cooperation, there must be an understanding of their racial







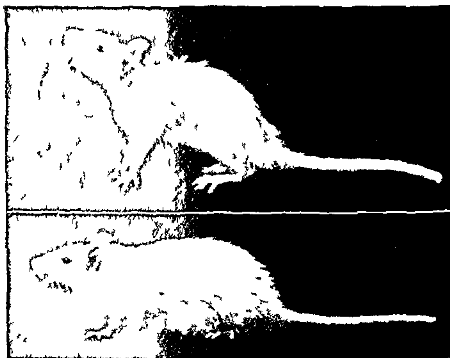
Courtesy of National Dairy Council, Chicago, Ill.

MILK MADE THE DIFFERENCE. AND THIS LITTLE PIG HAD NONE

backgrounds and the significance of their holiday observances and religious ceremonies, their social traditions, customs

and beliefs For example the religious laws of the Jews place restrictions on certain foods prohibit the use of others and dictate the methods of preparation of food A knowledge of these laws is essential to success in planning a diet for the orthodox Jewish patient

A study of the food habits of the different races will relate itself to the political and economic situation of a country its culture literature and technological progress cannot but result in a greater appreciation and understanding of the foreign born patient a clearer insight into his problems and greater success in teaching him and planning his diet with him With such a point of view American ways will not be imposed upon the patient but the better features of the native diet will be brought into harmonious adjustment



BEFORE AND AFTER ADMINISTRATION OF RIBOFLAVIN

How the little rat looked when he was having food that did not contain riboflavin and how he looked when he was given different food that contained enough of the vitamin

geography history topography and climate The study will inevitably lead to a comparison of the means and methods of production preservation supply and distribution of food in countries of advanced civilization and in those of more primitive standards and show how these factors determine the food practices of the various peoples

A knowledge of racial backgrounds influencing habits and customs the manner of life and ideals of peoples their art with changes which under the new environment are necessary for the protection of health

Yet diets the world over are made up of food materials that can be classified under a very few heads dairy products eggs meat fish fats fruits and vegetables cereals and breads and sweets The difference lies chiefly in the specific foods used from each of these groups and in the methods of preparation An understanding of food usages as well as of

dishes and their ingredients, typical of a people, is essential when teaching the foreign born patient (Table 1)

The diet is computed in general terms in relation to information obtained through the nutritional history, the patient's usual food intake, his individual tastes and the food usually available in the home or eating place outside the home

The *measurement of foods* to be used daily should be stated in definite amounts, and in terms that the patient will understand and find practical, so that he can estimate his servings with a fair degree of accuracy, thus helping to ensure his use of foods in prescribed amounts to fulfill body needs

Household measures most frequently used are the tablespoon, teaspoon and measuring cup These utensils are shown to the patient to make sure that he is familiar with them and visualizes them In like manner the differences in level, rounded and heaping measurements are indicated (Table 14)

Other units of measurement familiar to the patient are the sauce dish and the cereal bowl, and these are practical units to use if the patient is accustomed to having food served in such dishes He is shown a dish of the usual size and asked to compare it with the one he uses at home The level to which the average serving fills the dish is also demonstrated

The *ounce* is sometimes explained in terms of the tablespoon, one ounce being equal to two tablespoons of fluid, and an ounce of cottage or cream cheese equaling one rounded tablespoon The terms cup, pound and other measurements should be written out as abbreviations may be confusing to some patients

The *inch* is used to describe the dimensions of the average serving of certain foods, such as bread, crackers and cake The patient often finds this measurement particularly difficult to visualize, and therefore it is important to demonstrate it by means of real foods or food models, or by means of the ruler In this way he retains a mental picture of it by which to estimate his servings

The *gram* is frequently referred to when teaching the patient (p 61, 62), and it is therefore necessary to explain and teach the metric system A gram can be explained as the weight of the amount of water or like substance that would be contained in a cube with its three dimensions each measuring 1 centimeter (1/100 of a meter) Such a cube can be shown to the patient and also a meter stick if desired The gram can further be related to the ounce which is familiar to the patient, explaining that 30 grams equals 1 ounce A gram weight which is commonly used in laboratories can be shown The patient can also be taught that when the gram is divided into a thousand parts, each part is called a milligram, and when the gram is divided into a million parts, each part is called a microgram Further a gram multiplied by a thousand makes a kilogram, which is equal to 2 2 pounds

A *demonstration of the servings of foods* will give the patient a definite picture of the sizes of the servings he is to use so that he can estimate them without having to resort to the use of the teaspoon the tablespoon and the measuring cup in apportioning the amounts of food prescribed in the diet

Food models especially are helpful in demonstrating certain foods which are irregular in shape or size such as meat for stew, since the dimensions cannot be given in inches Although real foods can be used, reproductions of the average servings of foods in wax are more convenient The initial cost of wax models

is offset over a period of time by not having to replenish daily the fresh foods, and their use is far more economical in the end They can be used where it would be impossible to renew the food daily If wax models are not available, cardboard cut outs or pictures of the actual sizes of the servings of the foods can be used These are not so satisfactory, however, since they do not give all the dimensions

Dietary directions should be written preferably on a special form The patient will regard this as of the same nature as the prescription which he receives for medicine,—they are both orders or directions that should be carried out Moreover, the fact that the diet is especially planned for him helps to restrain the patient from trying to apply it to other members of his family or to his friends A printed diet list is not desirable, even when individualized to a certain extent by crossing out or encircling the foods not to be used

"Food for the Day" (Part I, Chapter 2), which lists the kinds of food to be used, with amounts in household measures, gives the patient a general view of his dietary plan He can see where it is like his usual diet, wherein it differs, and whether it provides enough food and food of the kind that he likes Thus it does not seem altogether new and unfamiliar to him It will show him whether he can fulfill it from the food usually available at home or in the place where he eats Moreover, he can use the list as a guide in planning, purchasing and preparing foods for his diet

Equivalents of the foods listed in "Food for the Day" should be known by the patient so that he may find the diet flexible and be able to vary it within the limitations it prescribes For this he must learn the values of the different foods given, and how these foods may be exchanged for others approximately equivalent in food value A means of helping him here is to state on the form, "Food for the Day," or on a separate list, the amounts of various foods that he may substitute for those prescribed in the diet (p 18, 61, 62) Frequently it is expedient to demonstrate to him in what respect these foods are equivalent so that he will better understand and remember them

The *carbohydrate* content of vegetables and fruits is usually expressed in terms of percentage,—"5 per cent," "10 per cent," "15 per cent," "20 per cent" vegetables and fruits being the classification popularly used But since it is not easy for the average patient to think in terms of percentage, a simpler method must be used to help him to visualize the carbohydrate content of foods Fortunately the piece of loaf sugar weighs five grams It is convenient, then, to visualize the approximate carbohydrate content of the average serving of vegetables and fruits with one, two, three, four or more lumps of sugar

Moreover, the lump of sugar can be used to show how many servings of a fruit or vegetable the patient may take in terms of his diet, and how he can interchange them For example, he understands that four servings of a "5 per cent" vegetable approximate four lumps of sugar, and that instead he may have two servings of a "5 per cent" vegetable and one serving of a "10 per cent" vegetable, or two servings of a "10 per cent" vegetable and none of a "5 per cent" vegetable (p 61–62)

Wax models of foods and lumps of sugar are effective materials with which to demonstrate carbohydrate content. A rough sketch of a food with the lumps of sugar that indicate its carbohydrate

One of a Series of Equivalents of Food Constituents Used with and Distributed to the Patients

FOOD EQUIVALENTS—CARBOHYDRATE

CARBOHYDRATE is the name given to the starches and sugars in foods All vegetables, fruits, cereals and breads contain carbohydrate

"5%" Vegetables

Each serving contains about 5 grams of carbohydrate, equal to the amount in 1 lump of sugar

Asparagus	8 stalks	Cauliflower	1 saucedish	Radishes	10
Beans string canned	1 saucedish	Celery	4 stalks	Rhubarb	1 saucedish
Broccoli	1 branch or 1 saucedish	Chard	1 saucedish	Sauerkraut	1 saucedish
Cabbage cooked	1 saucedish	Cucumber—medium	1	Spinach	1 saucedish
Cabbage raw	1 heaping saucedish	Eggplant	4 slices	Squash summer	1 saucedish
		Lettuce	10 leaves or ½ head	Tomato canned	½ cup
		Pepper, green	1 large	Tomato fresh	1
				Tomato juice	½ cup

"10% Vegetables

Each serving contains about 10 grams of carbohydrate equal to the amount in 2 lumps of sugar

Beans, string, fresh	1 saucedish	Carrots cooked	1 saucedish	Peas, canned	1 saucedish
Beets	2 medium	Carrots raw large	1	Pumpkin	1 saucedish
Brussels sprouts	7 small	Onions	2 medium	Squash Hubbard	1 saucedish
				Turnips	1 saucedish

SERVINGS OF FRUIT EQUIVALENT TO ONE ORANGE (Medium Size)

Each serving contains about 10 grams of carbohydrate equal to the amount in 2 lumps of sugar

Fresh Fruits

Apple—large	½	Grapefruit juice (unsweetened)	½ cup	Pineapple (½" thick)	1 slice
Apricots fresh	2	Grapes	15	Pineapple juice (unsweetened)	½ cup scant
Banana—medium	½	Lemons	1½	Plums	2
Berries	½ cup	Orange—medium	1	Strawberries	10 large
Cantaloupe	¼	Orange juice	½ cup	Tangerines	1 large
Cherries	15	Peach	1	Watermelon	1 small slice
Grapefruit	½	Pear—large	½		

Dried Fruits

Apricots dried halves	3	Dates small	2	Figs	1
		Prunes—medium	2	Raisins	1 tablespoon

SERVINGS OF VEGETABLES AND CEREALS EQUIVALENT TO ONE SLICE OF BREAD

Each serving contains about 15 grams of carbohydrate equal to the amount in 3 lumps of sugar

Beans baked	2 rounded tablespoons	Parsnip	1 large
Beans lima	2 rounded tablespoons	Potato sweet	½ small
Corn canned	3 rounded tablespoons	Potato white	1 small
Corn fresh	1 ear (small)		
Bread rye	1 slice	Cornstarch	1½ tablespoons
Bread white	1 slice	Flour	3 tablespoons
Bread whole wheat	1 slice	Matzoh (square type)	½
Crackers graham	2	Matzoh meal	2 tablespoons
Crackers saltines	5	Ry Krisps	3
Crackers Uneedas	3½		
Macaroni cooked	4 rounded tablespoons	Cornflakes	1 saucedish
Oatmeal cooked	1 scant saucedish	Puffed rice	2 saucedishes
Rice cooked	4 rounded tablespoons	Puffed wheat	2 saucedishes
Tapioca uncooked	1 tablespoon	Shredded wheat	¾ large or 1 small

FM 142 - 3/41 Boston Dispensary Food Clinic

One of a Series of Picture Sheets for Each of the Food Constituents Used with and Distributed to the Patients

CARBOHYDRATE (Starch and Sugar)

Carbohydrate (Starch and Sugar)
Provides energy for work and play





Carbohydrate (Starch and Sugar) is found in —

Bread
Cereals
Macaroni
Potatoes
Dried peas and beans
Flour
Rice
Vegetables

Fruits
Fruit juices
"Sweets" such as sugar, candy, jelly, honey
Desserts such as cake, pie
Tonics

Carbohydrate is usually measured in grams (30 grams = 1 ounce)

Daily Requirements of Carbohydrate Measured in Grams

Adults	4–6 grams for each kilogram (2 2 pounds) of body weight
Children	6–10 grams for each kilogram (2 2 pounds) of body weight

Below are pictures of servings of important food sources of carbohydrate Each serving provides 15 *grams* of carbohydrate Write in the blank space the amounts of these foods you eat in a day with the number of grams of carbohydrate beside them Add the figures and see if you get the number of grams you require

1 large orange — 15 grams; ½ cup orange juice — 15 grams	Amounts of Foods	Number of Grams	potato: 1 small white — 15 grams; ½ small sweet — 15 grams
6 halves apricots (dried) — 15 grams; 2 prunes — 15 grams		Total	1 sauce dish rice — 15 grams; 1 sauce dish macaroni — 15 grams
½ large banana — 15 grams	1½ sauce dish carrots — 15 grams	1 scant sauce dish fresh peas — 15 grams; 1 scant sauce dish lima beans — 15 grams	1 small piece cake — 15 grams; 2 tablespoons ice cream — 15 grams
1 glass milk — 15 grams	1 slice bread — 15 grams; 1 sauce dish oatmeal — 15 grams	crackers: 2 graham — 15 grams; 3½ soda — 15 grams; 5 saltines — 15 grams	3 lumps sugar — 15 grams; 1 tablespoon jelly — 15 grams

content is often sufficient for the purpose Posters designed to show amounts of foods that are equivalent in their content of a particular food constituent are especially helpful in teaching a group

The *protein* content of foods equivalent in protein is explained to the patient in terms of the amount present in one ounce of meat (p 53) The protein foods most commonly used have been discussed in detail under meat substitutes (page 54) The patient is shown that although milk and cheese contain additional fat, he may substitute them for meat if he omits one teaspoon of butter from his diet for each cup of milk He sees that if he uses as a substitute any of the legumes, all of which contain liberal amounts of carbohydrate, he must omit from his diet one small potato or its equivalent and add one teaspoon of butter to supply the fat in which legumes are lacking

The *fat* in foods equivalent in fat is stated in terms of the amount present in one teaspoon of butter (Table 27) The importance of butter as a source of vitamin A, as well as of fat, is stressed to the patient He is shown that since the other fats, except cream and fortified margarines are not good sources of vitamin A, the use of many of these equivalents is dependent upon the presence in the diet of liberal amounts of milk or other foods which are excellent sources of this vitamin

The *calcium* in various foods that are equivalent with respect to calcium is given in terms of the amount of it present in two tablespoons of milk (Table 29) The contrast of this small amount of milk with the large quantities of other foods except cheese, that must be used to supply the same amount of calcium, helps to emphasize to the patient the importance of milk in the diet This is further demonstrated with various combinations of foods necessary to supply a day's requirement of calcium for the adult and the child (Table 30), showing that when the amounts of milk and cheese are reduced to the minimum, larger quantities of other foods must be used Vegetables and fruits vary so widely in calcium content that it is advisable to list them according to the relative value of the average serving (Table 28) This is also a convenience when making a selection of vegetables and fruits according to their calcium content

The *phosphorus* content of various foods that are equivalent in respect to phosphorus is stated in terms of the amount of it present in four tablespoons of milk As with calcium, various combinations of foods supplying the day's requirement of phosphorus are given, and the vegetables and fruits are arranged according to the relative value of the average servings as sources of phosphorus (Tables 31–33)

The *iron* in various foods that are equivalent in their content of iron is stated in terms of the amount of it present in one egg (Table 35)

The actual amounts of the various minerals needed daily should be demonstrated in terms of the foods necessary to obtain them, if the patient is to see how the requirements can be secured This is particularly true in the case of iron Because the amount of it contained in a single food is infinitesimal, the requirement has to be obtained from many foods, whereas the calcium requirement can be fulfilled with a single food,—milk While the egg is an excellent source of iron, it can contribute but an eighth to a tenth of the day's need A chart showing the egg and foods that are equivalent to it in iron, will help the patient to visualize the sources from which he must obtain eight to ten times the amount of iron

supplied by the egg, to meet the day's requirement. For example, the chart will show that $2\frac{1}{2}$ slices of whole grain bread will give another eighth of the amount of iron needed, and that meat and certain vegetables and fruit will make important contributions.

Various combinations of foods are given that may be used toward supplying the day's requirement of iron (Table 36). To help the patient further, vegetables and fruits are listed in terms of the relative values of average servings as sources of iron (Table 34).

Vitamin equivalents are taught the patient on the basis of the recommended allowances of the Committee on Food and Nutrition of the National Research Council (Table 2). The protective diet (Part I, Chapter 2) can be reviewed in terms of its vitamin content, and the chart (p. 46) with columns of foods arranged under the headings of the various vitamins, will help the patient to visualize the foods supplying each vitamin, and also the fact that certain foods supply several vitamins. The patient is also given both printed lists of vitamin equivalents and picture sheets (p. 62), that he may evaluate the vitamin content of his diet (Tables 41–45). Inasmuch as a great deal of consideration is given now to the conservation of vitamins and minerals, the patient also receives data on this subject in chart form which can easily be remembered (p. 65). The patient should understand that food sources of vitamin D are so limited they need to be supplemented by sunlight or the "sun lamp," by medication, or vitamin D milk.

A "*Meal Plan for the Day*" is given to patients who wish more definite directions for combining into meals the foods listed in "Food for the Day." Such a plan is helpful also to those who have difficulty in arranging meals of the kind to which they are accustomed from the amounts and kinds of foods allowed in the diet. It is given in skeletal form to show the patient how he can utilize all the foods, how he can vary his meals by the use of equivalents and recipes, and how the diet can be adapted to the usual routine of his meals—whether he has them with his family or group, or prepares them himself or eats in the restaurant.

The *selection of food in the restaurant* makes a knowledge of the ingredients of made dishes especially important, because so many of the dishes served are combinations of foods. Furthermore, in order to help the patient to make the necessary adaptations the amount of money he has to spend for food must be known, as well as the differences in the type of food served in the various restaurants in which he eats, and the difference in cost.

Recipes are given. With the list of foods for the day, and equivalents, many patients ask how they may combine these foods, or whether they may use the combinations or "made dishes" to which they are accustomed. One must have a knowledge of the ingredients of these typical dishes of the foreign born groups to be able to show the patient how he may include them in his diet. The patients themselves will often furnish recipes, or these may be obtained from books on foreign cookery or from restaurants that serve these dishes, and much information can be gleaned from visits to the small grocery stores and bakeries in the neighborhood of the foreign born.

Nationality influences the method of teaching food equivalents to the foreign born patient. With respect to the varied use of cereals by different nationalities, for example, it should be remembered that

CONSERVATION OF VITAMINS AND MINERALS IN THE STORAGE AND PREPARATION OF FOOD

<table>
<tr><th rowspan="2">Factors Affecting the Loss of Vitamins and Minerals</th><th rowspan="2">Ways to Prevent the Loss of Vitamins and Minerals</th><th colspan="6">Foods Rich in Vitamins and Minerals</th></tr>
<tr><th>Vitamin A</th><th>Ascorbic Acid</th><th>Thiamine</th><th>Riboflavin</th><th>Calcium</th><th>Iron</th></tr>
<tr><td>STORAGE</td><td>Keep vegetables in cool moist place to prevent wilting and drying</td><td rowspan="2">Fruits
Vegetables</td><td rowspan="5">Fruits
Potato
Vegetables</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="4"></td><td rowspan="4"></td></tr>
<tr><td>OXIDATION</td><td>Avoid bruising fruits and vegetables to avoid exposure to air
Avoid stirring foods when hot
Cut fruits and vegetables when possible just before serving
Do not defrost frozen foods before cooking
Cook foods with skins on when possible</td></tr>
<tr><td>ALKALINITY</td><td>Do not add soda to water in which food is cooked</td><td rowspan="3"></td><td rowspan="3">Fruits
Meat
Milk
Potato
Vegetables</td><td rowspan="3">Fruits
Meat
Milk
Potato
Vegetables</td></tr>
<tr><td>HEAT</td><td>Cook as short a time as possible
Have water boiling when food is added
Use lowest heat possible</td></tr>
<tr><td>SOLUBILITY IN WATER</td><td>Use small amount of water when cooking fruits and vegetables
Use this water
Wash foods but do not soak</td><td>Fruits
Potato
Vegetables</td><td>Fruits
Meat
Potato
Vegetables</td></tr>
</table>

while the American uses many kinds, with milk and sugar, chiefly as breakfast dishes, the Italian uses spaghetti with tomatoes and other vegetables, and with meat and cheese, the Jew has oatmeal or farina for breakfast, and noodles, barley or buckwheat in soups, while the Near Easterner uses cracked wheat or rice in combination with meat or nuts and vegetables Bread is baked in such various shapes and sizes by the foreign peoples that it is difficult to visualize to the foreign born patient a piece of bread equivalent to the average slice of American bread except by weighing it

Exhibits Exhibits are one of the most helpful educational tools to use as a means of guidance and interpretation of food treatment They are valuable not only for patients who come to the Food Clinic, but for those who walk through the corridors or sit on the benches Simple nutritional facts can be taught through the medium of the exhibit

CHAPTER 6

THE EDUCATION OF THE PATIENT ON THE THERAPEUTIC DIET

THE THERAPEUTIC DIET

It is important that the patient on a therapeutic diet shall understand the modification of his diet from the normal and the reason for the modification

The general procedure used in teaching the principles of the therapeutic diet is the same as that for the normal diet As with the latter the patient must know the relation of food to the body, the body needs in terms of the food constituents and the foods that supply them The therapeutic diet must fulfill the normal needs of the body, but with a modification of the food constituents or foods, or of both, that will help to compensate for the dysfunction of the body part affected

THE MODIFICATION OF THE NORMAL DIET

It has been noted that the modification of the normal diet may consist in one or a combination of the following procedures

Food constituents,—increase or decrease in amounts,

Foods —increase or decrease in kinds and amounts,

the omission of certain foods,

a change in the consistency of foods,

a change in method of preparation of foods,

Meals,—a rearrangement of the number and frequency of meals and feedings

Frequently such modifications and restrictions make more difficult the choice of food sufficient in kinds and amounts to provide an adequate diet, and the patient may need special help and direction in this respect

PROCEDURE IN TEACHING THE PATIENT

The *physiology of the body part* affected is illustrated for the patient by charts and drawings or pictures, and its normal function in relation to food is demonstrated with simple analogies Its *pathology* is shown by pictures when possible With an understanding of both the normal function and the dysfunction in relation to food, the patient can be led to see how his diet must be modified

Dietary directions follow the same procedure as for the normal diet, and the same educational materials are used

A list of *"Food for the Day"* with equivalents is given the patient, the emphasis being placed on equivalents stated in terms of the food constituents that must be increased or decreased in amounts, according to the disease or condition

A *"Meal Plan for the Day"* will help him to adapt the foods allowed in the diet to his usual routine of meals, with consideration given, if need be, to the consistency and method of preparation of food

Recipes which use only the foods allowed and in the amounts prescribed by the diet are of great value to the patient

Demonstrations are arranged for special occasions, such as holidays, to show the patient how he may participate in the family's celebration without exceeding the limits of his diet

THE APPLICATION OF THIS PROCEDURE TO SPECIFIC DISEASES

The methods used in teaching the patient on a therapeutic diet are best illus-

trated by showing how they are applied to specific diseases

Diabetes is usually a familiar term and the patient sometimes speaks of it as the "sugar sickness"

The *body part affected* is shown by means of a picture of the pancreas (the Islands of Langerhans), and from a manikin or diagrammatic chart the patient sees its location in the body

Its *physiology* is explained in simple terms,—its function is to secrete a "juice" —insulin—which is necessary to utilize or "burn" the sugar from food

The word "sugar" must be interpreted, for the patient usually thinks of the sugar in the sugar bowl and believes firmly that he takes but little He knows, from household experience, that sugar can be dissolved in water, and starch cannot He is led to understand, then, that before the starch in bread, cereals, potatoes, vegetables and some fruits can be utilized by the body, it must be changed to sugar by digestive processes He is taught that carbohydrate is the name given to the starches and sugars in food He learns, furthermore, that such foods as meat, eggs, cheese, and even fat, are also sources of some sugar when digested or used in the body

The *pathology* of the pancreas is explained to the patient,—in a diabetic the pancreas secretes less insulin than is normal Hence the sugar that the patient obtains from his food is not completely burned and the amount present in the body is in excess of normal With a diagrammatic chart the patient can be shown that a part of the excess is stored in the blood, and that when the sugar in the blood goes above a certain amount it "spills over" and is excreted in the urine

If the patient shows the classical symptoms of diabetes, such as thirst, frequent urination, itching, excessive appetite or loss of weight, these can be used to explain how diabetes is affecting the body He is told that to be able to excrete the sugar the body must first dissolve it, and this requires large amounts of fluid It is this need for fluid which causes his great thirst He realizes that when he drinks large quantities of water he must urinate frequently He is shown that the itching is due to the presence of excess sugar and when he has less sugar there will be little or no itching His hunger and loss of weight, it is explained, are due to the fact that the body does not get the full value of the food taken, since part of it is lost as sugar in the urine

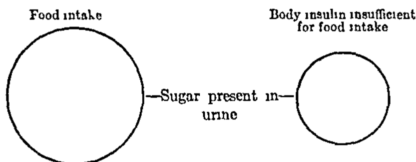
Laboratory tests are means of showing the patient that the amount of sugar in the blood and the amount excreted in the urine are indices of his condition, and that from these is determined his "sugar tolerance" Sugar tolerance is explained as being the amount of carbohydrate (sugar and starch) that he can use or tolerate without having sugar appear in the urine, or an increase of sugar in the blood Realizing the significance of an examination of the blood, the patient's fear and aversion to the procedure is somewhat diminished

The *terminology* used with the patient should be understood by him, and many expressions that are employed easily and fluently in teaching must be interpreted "Sugar tolerance," just defined, is one of these, and another is "sugar free," which is explained by showing the patient several samples of tested urine that contain varying amounts of sugar and contrasting these with a sample that contains no sugar and is said to be "sugar free"

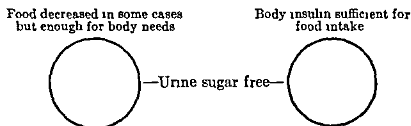
Patients often color diagrams or drawings of test tubes to illustrate the test for the presence of sugar in the urine They learn that blue indicates no sugar, green, a slight trace of it, yellow or yel

low green, about 1 per cent sugar, orange, about 1 5 per cent sugar, and red or reddish brown, about 2 per cent sugar—an excessive amount

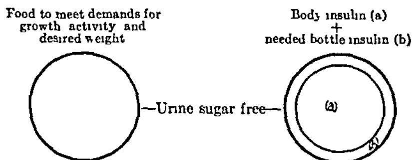
The *interdependence of diet and insulin* is illustrated by diagrams such as the following, showing that only as much food can be eaten as there is insulin to burn the sugar content of the diet It is explained to the patient that he has not enough insulin in his body to burn the sugar content of his food intake, and that because of this condition there is an excess of sugar in the blood, a part of which is excreted in the urine



He sees, therefore, that to be "sugar free" he must reduce his food intake, since he has only enough insulin to take care of a certain amount of food, and that he will remain "sugar free" as long as he maintains this balance between food and insulin



He is shown, further, that if the amount of insulin in his body (a) is not sufficient to take care of the food required for body needs, he must supplement his body insulin with 'bottle" insulin (b) to allow an adequate food intake and at the same time remain "sugar free "



Dietary directions are given to help the patient in the choice of foods he should make The method of teaching is that used in the case of the normal diet, for the patient needs to know the normal body requirements in terms of food constituents, the foods that supply them, and in addition how, in diabetes, the food must be restricted or limited to meet the dysfunction of the body part affected, the pancreas The reason for having food before bedtime is explained to the patient taking protamin zinc insulin

The *measurement of food* is important in diabetes, and the sizes of the servings that the diabetic patient is to use are demonstrated to him with food models These models, made of wax, are invaluable as a method of teaching amounts of foods by visual means to be sure that the patient will estimate his servings correctly This method of teaching makes the use of scales unnecessary, and allows the patient to follow a more nearly normal regime of living Frequent review of the diet in terms of what he is eating is necessary to make sure that he is following it accurately During these conferences the patient himself often gives helpful suggestions as to varying the diet

The *foods to be used* are written on the list, "Food for the Day," and equivalents are given, especially with respect to carbohydrate in which the diabetic diet must be restricted, and in terms of fat when that also is to be reduced That the diet requires special foods and specially planned meals, as so many believe, is shown to be a fallacy The patient learns, instead, that he can readily adapt his diet to the family life, with little modification or change Points where the patient may need special help in adapting his diet should be recognized and should receive emphasis in teaching

The patient learns that his diet has been prescribed on the basis of the amounts of food that his body can use without excreting sugar It can be determined usually from his weight and by the urine analysis and the blood sugar test whether this diet is satisfactorily adjusted to his sugar tolerance and if he is following it correctly

The *record of the food intake* that the patient keeps during the interval between visits helps him to understand these findings and serves as a basis for a discussion of his food habits (Part I, Chapter 5)

The *urine analysis* for sugar places certain responsibilities on the patient The patient is asked to bring with him, on each visit, a 24 hour specimen of the urine Printed instructions are given for this procedure, with necessary explanation In some instances the meaning of the 24 hour period needs to be demonstrated, with a clock or picture of one, as being the time the hands take to move twice around the clock A clean bottle given to the patient on the first visit is a means of emphasizing to him that the container for the specimen should be free from other substances, and moreover it can be used to demonstrate the amount of urine that will be sufficient for the analysis This helps also to emphasize the importance of the procedure of collecting the 24 hour specimen

If the patient is to test the urine at home, each step of the procedure is explained to him, pictures of the procedure are shown to him, and he performs a test satisfactorily before leaving the clinic He is given printed directions, both to help him to recall the procedure and to enable others at home to help him when necessary Also he has a special form on which to record in color the results of the urine analysis (p 71) The form indicates the times at which he is to make the

test, and a space is provided for the results of all tests made during the interim between visits to the clinic Also, he is given crayons with which to record as nearly as possible the color of the urine

FORM FOR RECORDING THE COLOR OF THE URINE TESTED AT HOME

COLORS OF URINE TESTS FOR SUGAR				
Name	B D No		Date	
Insulin—U			Dose	
Days	Night Time to Before Breakfast	After Breakfast to Before Noon Meal	After Noon Meal to Before Night Meal	After Night Meal to Bedtime

reaction, having practiced in the clinic the selection of the correct colors This record, being something that he can observe indicates to him what his condition is He is told that a reaction that is green yellow in color touches the danger line, and that then he must not delay in consulting a doctor It may indicate a maladjustment between diet and insulin Such a record of the urine reactions between visits also visualizes to the physician the amount of sugar present in the urine during this period and is a guide to him in treatment Moreover, the patient soon realizes that if he does not state his food intake correctly the urine analysis will probably indicate it, and consequently he discusses more frankly the circumstances when, for some reason, he has not adhered to his diet

The *administration of insulin* should be learned by the patient, when conditions require it, so that he need be dependent on no one else except for unusual conditions He should learn in the clinic to administer insulin to himself properly and with confidence, before he does it at home In teaching the administration of insulin the patient is first shown a series of photographs illustrating each step in the procedure When instructing the patient the pictures can be referred to as each step is taken

It sometimes takes infinite patience to overcome aversion to the procedure, fear of the prick of the needle and self consciousness concerning lack of skill Great care is taken to teach him the necessity of sterilizing the syringe, the needle and the top of the insulin bottle, and of strict cleanliness of the hands, and of the flesh at the point of injection of the needle Some other member of the household should be able to administer insulin to the patient, in case of emergency

The type of insulin syringe used should be of simple construction, with as few figures as possible, and a diagram of the syringe on which is plainly indicated the amount of dosage, with the time at which it is to be taken, helps the patient to carry out the procedure correctly (p 72) The symptoms of an insulin reac

tion are explained to the patient in simple terms so that he will recognize them if they occur, and his fear of a reaction is allayed when he learns that he can easily counteract it by taking some sugar, bread or cereal, or preferably the juice of an orange Emphasis is placed on the use of food before bedtime so that there will be sufficient food to balance the amount

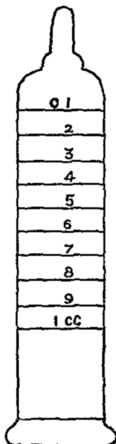


DIAGRAM OF SYRINGE, THE TIME AND DOSAGE TO BE WRITTEN IN FOR THE PATIENT

of insulin in case of a delayed utilization of the insulin As a further precaution, and as a means of reassuring him, he is given an identification card to carry Besides his address, it states that he is a user of insulin, and from whom he is receiving medical treatment

Environmental factors that affect the diet must be considered in the therapeutic diet as well as in the normal Most important are those factors that influence the habits of hygiene, both physical and mental, and special emphasis should be placed on means and facilities for developing good habits of personal hygiene A pamphlet on "The Care of the Feet," and pictures and exhibits can be used in teaching the patient

Other aids in teaching will suggest themselves The knowledge which the patient acquires will become more significant and vital to him if he restates it in a notebook in his own terminology and illustrates it with drawings and pictures Some guidance will usually be necessary Such practice will help the patient to apply more understandingly the principles taught him

Peptic ulcer will be used to illustrate further the procedure in teaching the patient on a therapeutic diet, since this condition requires not only an increase above the normal in the amount of a food constituent,—in this case, fat,—but also a change in the consistency of foods

The *body part affected* is illustrated by means of pictures and charts of the gastrointestinal tract, and the patient is helped to understand the normal condition of the lining of the stomach and how the presence of ulcer causes dysfunction of the stomach or intestine

Dietary directions are given To help the patient to realize the reason for his discomfort the ulcer may be likened to a sore He is accustomed to treat a sore on his body, and knows that acid, touching it, causes it to sting, and he understands that the ulcer would be irritated by the same means He is told that there are two sources of acid that may affect the ulcer the accumulation of the gastric juice and the acid tasting foods It is clear to him that the latter should be generally avoided However, orange juice, strained and diluted and taken after other food is usually tolerated He is

hown that the irritation can be lessened by eating, at frequent and regular intervals, food with which the hydrochloric acid combines readily, such as milk, and further, that the secretion of hydrochloric acid can be decreased by the use of large amounts of fat, and by avoiding foods that stimulate its flow, such as meat, meat broths and gravies and other foods This helps him to understand why milk and cream are so important and satisfactory in the treatment of ulcer

Carrying further the analogy between the ulcer and a sore, the patient will understand that the consistency of the foods that come in contact with the ulcer should be like a salve—smooth and soothing He is told that the stomach has certain movements for "churning" and "grinding" food, which are a part of the process of digestion He readily sees that giving food of a soft, smooth consistency decreases the work of the stomach because the food preparation has been carried on outside the stomach Further, he is led to see that meat contains fiber that requires "grinding" by the stomach, and that for this reason and because it stimulates the flow of the hydrochloric acid it must be omitted from the diet until the ulcer heals

The strainer or sieve is at hand to show that only such foods as can go through the fine meshes should be used Samples of strained foods—vegetables, cereals and fruits,—especially those in glass containers in which the food can be seen, are valuable in helping to explain fiber, cellulose and roughage, and to visualize the right consistency It is helpful to give the patient samples to take home to guide him in the preparation of the food, especially if another person, to whom he must explain the instructions, prepares the diet The diagram of the whole grain (Part I, Chapter 5, p 56) will show the patient why the refined cereals are used in this diet, and that enriched white bread is preferable to whole grain bread because it contains no roughage

In this diet it is especially important to give the food in terms of the "Meal Plan for the Day," in order to stress the regularity of the meals and feedings and the amounts of food that should be taken at one time Foods that should be avoided because of their harmful effect on the ulcer are listed for the patient, and recipes may be given him, especially for preparations of milk, eggs and cereals Equivalents give variety to the diet, but the choice of foods should be made with great care as the treatment limits so greatly foods containing certain vitamins and minerals The record which the patient keeps of his food intake will help him to evaluate the effects of the diet in the improvement of his condition and will demonstrate the importance of adhering to it strictly It will serve also as a basis for discussion of the principles of the treatment (Part I, Chapter 5)

Food allergy has been chosen as another illustration of the procedure used in teaching the patient, since it requires the omission of certain foods from the diet, although the food constituents are given in normal amounts

The *physiology and pathology* of the body part affected cannot be explained and visualized so easily in food allergy as in other diseases, for it is difficult for the patient to understand the antagonism existing between antibodies in the body cells and the allergens of foods

Dietary directions The word "allergy" is usually new to the patient and should be spoken frequently and written several times As in the normal diet the patient is shown by pictures how the body builds its own substance by transference to itself of like materials from food It is ex

plained to him, further, that sometimes certain foods are resisted by the body cells, which act against them, and symptoms such as those of which he complains are evidence that this is happening. Frequently a patient has found from his own observations that eating certain foods produced certain symptoms. In this connection the words "sensitive" and "allergic" may be introduced, and the patient understands that he is sensitive or allergic to those foods and must omit them from his diet because they produce the symptoms with which he is familiar and which indicate a disturbance in the body. Usually he asks whether he will ever again be able to eat these foods. He is told that when he has been free from symptoms for a long period he may take the foods again, one at a time, and in small amounts at first, to see if the body can tolerate them, that if any of the symptoms reappear the foods must again be immediately omitted, and that if the foods are tolerated, the amounts taken may be increased gradually until they assume their usual place in the diet. It is explained that when he is able to take these foods freely without symptoms, he has become "desensitized."

The word "tolerance" needs explanation. When the patient can take the foods to which he has been sensitive and show no symptoms, he is said to have gained a *tolerance for them*.

The *foods used* by the patient must meet the requirements of an adequate diet. If certain foods have to be omitted from the diet, the patient understands that foods must be substituted to supply equal amounts of the food constituents, or medication must be prescribed.

Just as in the case of the normal diet, the patient must know the body needs and the values of different foods as sources of the food constituents required to fulfill these needs. If foods important to the adequacy of the diet must be omitted, the patient should know what food constituents they contribute to be able to select foods to replace them. Care must be taken in the choice of equivalents so that the patient will not make the error of choosing another food to which he is sensitive.

The patient is led to see, for example, that if he cannot take milk, the *protein*, *calcium*, *phosphorus*, *vitamin A*, *thiamine* and riboflavin that it contributes must be supplied by other foods, and that to ensure right amounts of vitamin D, sunlight and medication must be provided. He is then guided in the selection of equivalents for milk. He sees that cheese makes a good substitute, when allowed, since one ounce equals one cup of milk in all the food constituents except carbohydrate, thiamine, riboflavin, and niacin. He finds that there is no other practical substitute than cheese in terms of calcium and phosphorus, and it may be necessary, therefore, to have medication. The protein may be supplied by meat, fish or poultry of the kinds to which he is not sensitive. He may use eggs to provide protein and vitamin A, thiamine and riboflavin. Or vitamin A may be supplied by butter or fortified oleomargarine. In looking for other sources of the vitamins, he finds that whole grain bread and cereals are valuable for thiamine, riboflavin and niacin, and the enriched bread for thiamine and niacin, and by choosing the kinds to which he is not allergic he may use them. Otherwise, he will have to depend for these vitamins upon the legumes, vegetables and fruits to which he is not sensitive—and these will also help to supply carbohydrate and minerals.

Foods to avoid are remembered with the help of a list of the foods that the patient is "*Not to Eat.*" Special emphasis

is placed on the "hidden" foods, that is, foods to which the patient is sensitive but whose presence in a "made dish," or in certain foods purchased—as cereals, breads, oils, mayonnaise and others—is not evident and is not indicated by the trade name Lists of these foods are given the patient,—for example, foods in which the egg is used, as certain sauces, breads, cakes, desserts and salad dressings Samples of various foods should be available, especially samples of the "hidden" foods and foods less familiar to the average patient, to help to demonstrate to him what he may and may not eat

"Food for the Day" is given in kinds and amounts of food that the patient can eat, with lists of equivalents and recipes to help him in choosing a diet sufficiently varied to satisfy his desires Great care must be used, in giving equivalents, to be sure that when substitutions are made sufficient amounts of all the food constituents are present in the diet for the day The patient is shown that to make the diet adequate he may have to eat larger than average servings of certain foods used as substitutes, because they contain the desired food constituents in smaller quantities

Recipes using only the foods to which he is not sensitive are given to the patient to help him in the preparation of the diet and to gain his adherence to it For example, when wheat is omitted, it is difficult to make a bread that is satisfactory to the patient because the flours from other cereals do not produce a good raised bread, and he does not easily become accustomed to bread made with baking powder or soda Therefore, recipes are given for breads using flours and cereals to which he is not sensitive, and which usually must be prepared at home because they can rarely be purchased Frequently a patient will omit bread from the flours that are allowed him because he lacks the facilities or the inclination to prepare it Suggestions for ways of using and preparing cereals are given to encourage him to use them Also recipes for foods unfamiliar to him will sometimes help to encourage him to include them in the diet

The *cost of the diet* may have to be increased when several of the more commonly used and cheaper foods must be omitted and it then becomes necessary to use the more expensive foods Under such circumstances, in order to ensure the diet, it must be known whether the income will permit the purchase of these foods, especially when the diet is inadequate without them

A *record of the food intake* (Food Diary) should be kept by the patient, and he should note any symptoms and the time at which they appear This helps him to realize the importance of following his diet exactly It helps also to estimate more accurately how well he understands the diet and how faithful he is in adhering to it (Part I, Chapter 5, p 45)

Contributing factors, other than food, with which the patient makes contact within or without the home often cause or intensify symptoms These must also be listed for him The patient is asked, in his turn, to record with his food intake the circumstances under which symptoms occur To assist him further to recognize environmental contacts to which he may be allergic, he is asked to make an inventory of the contents of the rooms or places in which he works, eats, sleeps, and plays, and this is closely studied in conference with him

PART II

TABLES TO SIMPLIFY THE COMPUTATION OF THE DIET

FOREWORD

The tables assembled here will aid in the computation of diets They can be used independently of the text, just as the engineer refers to tables of figures for help in solving his problems

The first three of these tables furnish data fundamental in planning and computing diets In Table 1 are listed the elements of which the body is composed, the substances that are present in food and the purpose of each of these food constituents in relation to body needs, and in the last column the foods that are sources of these food constituents Reading from left to right on this page, one will see the composition of the body, the food constituents of like substances, and the foods that supply these substances Or if one would wish to read from right to left in the evaluation of a food there would be found a list of foods supplying the various food constituents, the value of these foods in serving the body and the like substances in the body which they supply

Table 2 gives the daily requirements of each food constituent, for adults and for children

Tables 3 lists again the foods that are principal sources of the various food constituents, but in more complete form than in Table 1 Here the foods are grouped in columns under the names of the food constituents they contain, and arranged in such a way that a glance will show the values of particular foods in terms of the number of the food constituents they supply

Throughout the world people use the same types of food, according to their availability,—breads and cereals, milk and milk products, eggs, meat and fish, vegetables and fruit These foods differ in kind and in usage, in different countries, under the influence of geography, climate, history, transportation and technological progress of the country But wherever physical and mental efficiency are maintained, it will be found that people have intuitively, through the ages, adopted a diet and dietary customs that provide sufficient amounts of the food constituents, in accordance with the standards given in these tables Racial diets and food habits are described briefly in Table 4

Sex, weight, height, age and activity need to be known to determine the dietary requirements Therefore Tables 5–13 give weight height age measurements and energy requirements for the adult and for the child

Table 14 gives abbreviations, and weights and measures of various units, to interpret data used throughout the book

In the table of "Food Values and Measures in Terms of Average Servings of Food" (Table 15), average servings are given both in grams and household measures The amounts given for household measures are approximate measurements They have proved advisable as the patient

can easily comprehend them and they more nearly represent his practice in the purchase and serving of foods The figures for the amounts of the food constituents have been secured from authoritative sources, but it is well understood that they represent proximate analyses The food values stated may not represent the exact composition of foods, because of certain errors that are inevitable in the analytical methods commonly used[1] It is to be remembered also that foods are subject to natural variations in composition, the causes and extent of which are only just beginning to be investigated with adequate thoroughness[2]

Nevertheless the great value of these data has been successfully demonstrated in the experience of many years For more than a quarter of a century the tables of Atwater and Bryant have been recognized as the great scientific contribution to dietetics[3] In determining the figures for protein for practical use, these investigators accepted nitrogen as present in foods to the extent of 16 per cent of all proteins On this authority the factor 6 25 has been used for the conversion of nitrogen to protein (N × 6 25) But it was recognized that this value, designated as "total protein," is subject to two types of error In the first place, all foods contain varying amounts of nitrogenous bodies that are not protein, as Atwater and Bryant pointed out, and further it cannot be assumed at the present time that all proteins contain 16 per cent nitrogen In experiments with a few foods, Jones determined the correct figures for the proteins and showed that the nitrogen present varied from 13 per cent to 19 per cent[4] In regard to these findings, Newburgh writes

"Since the magnitude of the first source of error, that is the per cent of nitrogen in non protein forms, is known only for a few foods, these new factors cannot yet be successfully applied often enough to justify a change in the values for protein now in common use "[5]

"Many instances in which chemical studies of the amino acid composition of a protein were correlated with nutritional studies of its effectiveness in meeting the body's protein requirement have shown clearly that the nutritive value of a protein depends primarily upon the kinds and relative proportions of the amino acids into which it is resolved by digestion "[6]

In the determination of the total fat in foods, both fat, and the fat like substances extracted at the same time, are included Newburgh makes allowance for this by using in his tables the inclusive term "lipids " In most analyses of foods the fat like substances are usually insignificant Until more exact estimates are reached the present analyses can be used and interpreted as total fat, and the error can be considered negligible

The earlier tables stated the figures for carbohydrate obtained "by difference," —by adding the analytical data for water, fat, protein and ash and subtracting the sum from 100, assuming the remainder to be carbohydrate This method is characterized by Newburgh as including

[1] This does not hold in the field of research where accuracy of figures is demanded for satisfactory results and the foods used in experimental amounts are carefully analyzed for their exact values

[2] Sherman Chemistry of Foods and Nutrition 6th ed p 561, Macmillan Co 1941

[3] For a detailed description and discussion of the analytical methods on which these tables are based see Bulletin No 28 Office of Experiment Stations U S Dept of Agriculture

[4] Circular 193 U S Dept of Agriculture 1931

[5] Newburgh and Mackinnon *The Practice of Dietetics* p 100 Macmillan Co 1934

[6] Sherman and Lanford *Essentials of Nutrition* p 90 Macmillan Co 1943

a table for this procedure is also included (Table 54)

There is a table for the ketogenic diet, for the relation of carbohydrate to fat (Table 55), and also a table of the Food Content of Diets Modified According to Consistency (Table 56) Another table shows the deviation from the normal diet for the overweight, underweight or normal weight diabetic patient, in grams of carbohydrate, protein and fat per kilogram of body weight (Table 57)

There are many variables that would militate against exactness in fulfilling the food requirement, even if accurate figures were available For example, the out patient is not under strict control, and there are chances for error in the possible waste of food or in inexact measurements, or in methods of preparation, that would alter the values of the food intake The patient's condition in response to the diet must be the real test for adequacy, point ing to such adjustments in the amounts of food prescribed as may be needful to accomplish the desired results

TABLE 1
THE RELATION OF FOOD TO THE BODY
(The Body as a Builder of Its Own Substance)

The Composition of the Body	Food Constituents that Supply the Body Needs for Building and Functioning	Foods that Supply Food Constituents for the Body Needs
Carbon Hydrogen Oxygen (Water; Carbohydrate and Fats; Protein)	*Carbohydrate* The primary source and most readily available form of energy Stored in the body and may be transformed into fat	*Carbohydrate* Bread, cereals fruits milk, sugar vegetables
	Fat An additional source of energy an essential constituent of body cells chief form of food storage	*Fat* Butter cheese cream egg yolk, fats meats, milk, nuts oil vegetable fats
Nitrogen	*Protein* Primarily for growth and maintenance of body tissue and also a source of energy	*Protein* Cereals, cheese eggs fish legumes meat, milk, nuts
Sulphur (Minerals)		*Sulphur* Chiefly in protein foods
Iron	*Iron* The essential element in hemoglobin the oxygen carrying constituent of the blood	*Iron* Beans (dried) cereals (whole grain or enriched) egg yolk, fruits (dried) meat (especially liver and kidney) molasses vegetables (green)
Calcium Phosphorus	*Calcium and Phosphorus* Essential for growth and maintenance of the skeletal structure (bones and teeth)	*Calcium* and *Phosphorus* Cereals (whole grain), cheese eggs fruit milk, nuts vegetables
Potassium Sodium Chlorine Iodine Copper Manganese Silicon Mercury, Fluorine Zinc, Aluminum and others	*Calcium, Phosphorus Iron* and *Other Minerals* They maintain the proper fluid environment for cellular activity and are constituents of the body cells	*Potassium* Meat potatoes vegetables *Sodium Chloride* Salt *Iodine* Sea foods and foods from regions with an adequate supply of iodine in water and soil *Manganese* Beans (navy) beets blueberries peas (split) wheat bran, wheat (whole grain) *Copper* Beef liver, calf liver chocolate currants mushrooms oysters *Other Minerals* Supplied by above foods
Vitamin A (Vitamins)	*Vitamin A* Essential for growth and health Maintains healthful condition of the skin and mucous membrane Helps to build teeth and bones Promotes normal vision Important for vision in dim light	*Vitamin A* Liver and fish liver oils Dairy products in which the fat is retained Fortified oleomargarine Fruits—apricots peaches cantaloup Vegetables—green leafy and yellow

Continued on next page

TABLE 1—*Continued*

The Composition of the Body		Food Constituents that Supply the Body Needs for Building and Functioning	Foods that Supply Food Constituents for the Body Needs
Thiamine	Vitamins—*Continued*	*Thiamine* Essential to metabolism of carbohydrate Essential to nervous and muscular systems Contributes to good muscle tone Maintains and stimulates appetite Aids the regular bowel movement Essential for growth	*Thiamine* Meat particularly pork Milk Enriched or whole grain breads and cereals Vegetables—green leafy and legumes Fruits Nuts
Riboflavin		*Riboflavin* Promotes growth Helps to keep the skin healthy Essential to functioning of every body cell Helps eyesight Part of one of the essential enzyme systems	*Riboflavin* Milk Cheese and eggs Meat and fish Fruits Vegetables—green leafy Whole grain breads and cereals
Niacin		*Niacin* Promotes growth Necessary to keep skin and other tissues normal Part of one of the essential enzyme systems	*Niacin* Meat and fish Fruits Vegetables Whole grain and enriched breads and cereals Peanut butter
Ascorbic Acid		*Ascorbic Acid* Helps to build and maintain strength of walls of capillaries Essential for normal development of bones, teeth and gums Essential for normal growth Essential for maintaining integrity of connective tissue	*Ascorbic Acid* Citrus fruits Raw vegetables Tomato
Vitamin D		*Vitamin D* Helps the body to make the best use of calcium and phosphorus in building the bones and teeth Helps to prevent rickets Promotes growth	*Vitamin D* Fish liver oil Milk, especially *irradiated milk, modified milk* and *metabolized milk* Oily fish such as salmon, herring, sardines Egg yolk Butter Liver
		Water The fluid medium of the body necessary for its structure and functioning	*Water* Water and the water found in foods

TABLE 2

APPROXIMATE AMOUNTS OF THE FOOD CONSTITUENTS NEEDED PER DAY FOR BODY BUILDING AND FUNCTIONING IN TERMS OF THE STANDARD OR OPTIMAL REQUIREMENTS[1, 2]

	Protein	Fat	Carbohydrate	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Vitamin D[3]
	Grams per kilogram of body weight			Grams	Grams	Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams	I U
Adults	1-1.5	1-2	4-6									
Man				0.8	1.32	12	5000	1800	2700	18	75	—
Woman				0.8	1.32	12	5000	1500	2200	15	70	—
Pregnancy				1.5	2.0	15	6000	1800	2500	18	100	400-800
Lactation				2.0	2.0	15	8000	2300	3000	23	150	400-800
Children	2-3	2-3	6-10									
Under 1 year				1.0	1.0	6	1500	400	600	4	30	400-800
1-3 years				1.0	1.0	7	2000	600	900	6	35	—
4-6 years				1.0	1.0	8	2500	800	1200	8	50	—
7-9 years				1.0	1.0	10	3500	1000	1500	10	60	—
10-12 years				1.0	1.2	12	4500	1200	1800	12	75	—
Girls	2-3	2-3	6-10									
13-15 years				1.3	1.2	15	5000	1400	2000	14	80	—
16-20 years				1.0	1.2	15	5000	1200	1800	12	80	—
Boys	2-3	2-3	6-10									
13-15 years				1.4	1.32	15	5000	1600	2400	16	90	—
16-20 years				1.4	1.32	15	6000	2000	3000	20	100	—

Calories To estimate the total calories multiply the grams of carbohydrate and the grams of protein by 4 and the grams of fat by 9 and total the results

To secure the number of calories needed for light activity use the median figures for carbohydrate protein and fat

For moderate or greater activity increase either the carbohydrate or the fat or both (see Tables 11-13)

[1] The minimal or actual requirement is about 50 per cent below the standard given here The custom of allowing such a 50 per cent *margin of safety* in so-called *dietary standards for body* building material is now come into more general use in the teaching of dietetics —Sherman Henry C *Chemistry of Food and Nutrition* p 511 Macmillan Co 1932

[2] Minerals and vitamins recommended by Committee on Food and Nutrition of National Research Council—1941

[3] The amount of Vitamin D needed has not been determined for adults and older children but should be provided *probably up to the minimum* amount recommended for infants

FOODS THAT ARE

Protein	Fat	Carbohydrate	Calcium	Phosphorus	Mine[rals] Iro[n]	
Milk	Milk	Milk	Milk	Milk	Milk	
Cheese *Egg Fish *Meat *Poultry	Cheese Egg yolk Fish fat Meat fat		Cheese Egg -	Cheese Egg yolk Fish Meat Poultry	Egg yolk Shell fish Meat Poultry	
	Butter Cream Lard oil Margarine fortified		Cream	Cream		
		Fruits	Fruits Berries Citrus fruits Figs dried fruits	Fruits Berries Dried fruits	Fruits Banana Berries Dried fruits Grapes	
Vegetables †Beans dried soy †Peas dried		Vegetables Beans dried soy Peas dried Other vege tables	Vegetables Beans dried snap soy Green leafy vegetables	Vegetables Beans dried fresh soy Cabbage Carrots Green leafy vegetables Peas fresh dried	Vegetables Beans dried fresh soy Green leafy vegetables Peas dried fresh	
†Potato †Bread †Cereal		Potato Bread whole grain or enriched Cereal whole grain or enriched Cornmeal Crackers Flour Honey Macaroni Rice polished Sugar Tapioca Molasses		Potato Bread whole grain Cereal whole grain	Potato Bread whole grain or enriched Cereal whole grain or enriched	Pota[to] Cereal
†Nuts	Nuts		Molasses	Nuts	Molasses	

* Complete protein
† Incomplete protein
‡ For Table of Food Values and Measures see Table 15

OF THE FOOD CONSTITUENTS‡

	Vitamins					
...er	A	Thiamine (B_1)	Riboflavin (B_2)	Niacin	Ascorbic Acid (C)	D
	Milk	Milk	Milk	Milk		Milk Vitamin D added
	Cheese		Cheese			
	Egg	Egg	Egg	Egg		Egg yolk
			Fish	Fish		Fish fat
	Liver	Meat	Meat	Meat		Liver
		Poultry	Poultry	Poultry		
	Butter					Butter
	Cream					
						Fish liver oil
	Margarine fortified					
...o ...	Fruits Apricots Cantaloup Peaches Prunes	Fruits Banana Orange citrus fruits Pineapple Plums Prunes	Fruits	Fruits	Fruits Orange other citrus fruits Berries	
...es ...s ...leafy ...ables ...ried ...o	Vegetables Beans snap Green leafy vegetables Peas fresh Tomato Yellow vegetables	Vegetables Asparagus Beans dried soy Cabbage Carrots Green leafy vegetables Peas fresh	Vegetables Beans lima soy Green leafy vegetables Peas fresh	Vegetables Beans soy Carrots Green leafy vegetables Peas fresh	Vegetables Cabbage raw Carrot raw Green leafy vegetables Green pepper Tomato	
	Potato sweet	Potato Bread whole grain or enriched Cereal whole grain or enriched	Potato Bread whole grain or enriched Cereal whole grain or enriched	Potato Bread whole grain or enriched Cereal whole grain or enriched	Potato	
		Nuts	Nuts	Peanut butter		

TABLE 4

SUMMARY NATIVE BACKGROUND AND FOOD HABITS OF SOME OF THE FOREIGN BORN AND THEIR AMERICAN ADJUSTMENTS[1]

ITALIANS

Background	
GEOGRAPHY AND CLIMATE (Refrigeration and preservation of food aside from some drying and pickling are almost unknown due to geographical factors which make transportation etc difficult)	1 Three sections northern central and southern or Sicilian 2 Good farming land vineyards 3 Warm climate similar to California 4 75 per cent of population work out of doors in fields and in vineyards 5 Many fishermen in southern section
REASONS FOR COMING TO THE UNITED STATES (Immigrants from all countries are almost entirely from the peasant or land working class This is the group we are discussing here)	1 Heavy taxes 2 No educational opportunities 3 Overpopulation 4 Lure of America the land of golden opportunity 5 Report of relatives or friends already in the United States
CHARACTER OF PEOPLE AND HOME LIFE	1 Hot blooded temperamental especially in the South Feuds flourish 2 Emotional eager to please 3 Artistic fond of good music art and color 4 Father is head of family getting first of everything 5 Mother s chief place in life is to cook and care for family and have as many children as possible 6 Charming superstitious and often poor disciplinarians 7 Women good cooks and spend much time getting meals 8 Roman Catholics

Food Habits: Native	Food Habits: In America
I Cereals Breads Starches	
1 Macaroni and spaghetti 2 Corn meal known as polenta a main dish 3 Bread flour for bread and macaroni is not refined ground whole grain being used Chestnut flour used in northern part	1 Corn meal polenta used as main dish Do not care for or use cereals such as oatmeal Wheatena farina etc 2 Macaroni and spaghetti in many shapes and forms Use quantities with various sauces and cheese 3 White bread very crusty Are using more Italian whole-wheat bread than formerly
II Milk Cream Cheese Butter Eggs	
1 Milk is used mainly as cheese Children drink goat s milk 2 Cheese in abundance especially hard cheese 3 No cream 4 No butter 5 Eggs fried or in soups	1 Are learning to use more milk for children to drink but not enough is used 2 Do not like American cheese and as imported cheese is expensive they do not use it as freely as in Italy 3 No cream 4 Will give butter to children 5 Eggs, fried plain or with peppers spinach etc

SUMMARY

NATIVE BACKGROUND AND FOOD HABITS (*Continued*)

Near East—Armenia, Syria Turkey, Greece

Background	
Geography and Climate (Refrigeration and preservation of food aside from some drying and pickling are almost unknown due to geographical factors which make transportation etc difficult)	1 Fairly elevated countries with many mountains tablelands and foothills making communication and transportation difficult No railroads Use caravans 2 Fine grazing and fertile farming land Rich in minerals 3 Mild climate People live out of doors in tents March to November raising own food
Reasons for Coming to the United States (Emigrants from all countries are almost entirely from the peasant or land working class This is the group we are discussing here)	1 Persecution by the Turks in the name of Mohammed Parts of Armenia and Syria are Christianized hence the Turkish massacres 2 Few women have come in except as men already here have returned home to marry
Character of People and Homelife	1 Friendly neighborly races 2 Makers of exquisite rugs and etched and tooled copper and brass Rugs assume importance, because people live out so much and have little use for furniture Use rugs a great deal 3 Women good cooks 4 United family life

Food Habits: Native	Food Habits: In America
I Cereals Breads Starches	
1 Cracked whole wheat (bourglour) and rice used plain or with meat or nuts and vegetables Sometimes as a cereal 2 Bread is same as that used in time of Christ baked on griddles in round flat loaves also in coarse loaves, oven baked (Greece) Finely ground whole wheat is used	1 Cracked wheat and rice used with meat or nuts and vegetables 2 Will give children cereal for breakfast 3 White bread of refined flour baked on griddles same as in old country
II Milk Cream Cheese Butter Eggs	
1 Milk in form of a thick sour milk (goat s milk) Leban (Syrian) Matzoon (Armenian) 2 Sour milk and hard cheeses 3 No cream 4 Butter made of sheep s milk	1 Do not use enough milk Are suspicious of bottled milk Pasteurized milk does not make such good Matzoon 2 Sour milk and hard cheese used somewhat 3 No cream 4 No butter—will give both milk and butter to children when urged
III Vegetables and Fruits	
1 Abundance of vegetables stuffed with wheat or rice and meats or nuts, and cooked with oil and lamb broth (squash peppers grape leaves cucumbers, tomatoes eggplant etc) 2 Salads with olive oil and vinegar and free use of olives 3 Semitropical fruits in abundance (grapes dates figs oranges etc)	1 Plenty of vegetables used if money permits These are stuffed with wheat or rice with meat, nuts, beans etc then cooked with oil and lamb broth (peppers tomatoes cabbage and grape leaves cucumbers squash etc) 2 Few potatoes 3 Few fruits except dried apricots raisins etc

Factors Influencing Conditions in United States	
	These people do not become laborers to a y great tent They ha e pu hearts fruit tores antiq e-rug shops are waiters rug repairers etc Beca e of arts-and crafts work at home they are n t so lost w thout out-of-door work here U der or d nary c rcumstances these people are usually independent although high cost of livi g often results in poorly t alanced d et h gh in fats and starches and l w in fresh vegetables fru ts and milk Have been ha d hit by the depression Results overweight some malnutrition and some constipation

IV Meats and Meat Substitutes	
1 *Lamb (Kel b) is o ly m at sed to ny xt nt It is ually barbec e l ov r f re out f doors Or is combi ed with* cracked wheat or r ce and tuffed into vegetables 2 Nuts re u ed with cracked wheat or rice in place of meat (p gnolias pistachi s etc) 3 Dried beans peas and lentils used somewhat	1 Lamb (Kebat) is only meat use l to any extent Is cooked on skewers or with wheat or rice Sometimes is ground and eaten raw with cracked wheat (Some ch ps no roasts etc) 2 Combined with cracked wheat or rice served instead of potato stuffed into vegetables etc 3 Nuts are used in place of meat with cracked wheat and rice 4 *Dried peas* beans lentils used somewhat
V Sweets	
1 Honey used for sweetening Molasses made from grapes 2 Few desserts except on special occasions 3 Paklava (pastry with nuts and honey) 4 Fruit compotes 5 Fruit candies and Turkish paste	1 Both l o ey and sugar used for sweeten ing Molasses made from grapes 2 Use few lesserts 3 Fruit compc tes 4 Paklava (pastry with nuts an l honey) or shredded wheat with nuts and honey bread and honey with cream can be bought at restaurants and bakeries 5 Aprict t candy Turkish paste
VI Miscellaneous—Oils Spices	
1 Sheep s butter 2 Olive oil 3 Many and varied spices 4 Turkish coffee	1 Olive oil used a great deal 2 Many and varied spices in combina tion 3 Turkish coffee

SUMMARY

NATIVE BACKGROUND AND FOOD HABITS (*Continued*)

Near East—Armenia, Syria, Turkey, Greece

Background	
Geography and Climate (Refrigeration and preservation of food aside from some drying and pickling are almost unknown due to geographical factors which make transportation etc difficult)	1 Fairly elevated countries with many mountain tablelands and foothills making communication and transportation difficult No railroads Use caravans Fine grazing and fertile farming land Rich in minerals 3 Mild climate People live out of doors in tents March to November raising own food
Reasons for Coming to the United States (Emigrants from all countries are almost entirely from the peasant or land working class This is the group we are discussing here)	1 Persecution by the Turks in the name of Mohammed Parts of Armenia and Syria are Christianized hence the Turkish massacres 2 Few women have come in except as men already here have returned home to marry
Character of People and Homelife	1 Friendly neighborly races 2 Makers of exquisite rugs and etched and tooled copper and brass Rugs assume importance, because people live out so much and have little use for furniture Use rugs a great deal 3 Women good cooks 4 United family life

Food Habits: Native	Food Habits: In America
I Cereals Breads Starches	
1 Cracked whole wheat (bourglour) and rice used plain or with meat or nuts and vegetables Sometimes as a cereal 2 Bread is same as that used in time of Christ baked on griddles in round flat loaves also in coarse loaves, oven baked (Greece) Finely ground whole wheat is used	1 Cracked wheat and rice used with meat or nuts and vegetables 2 Will give children cereal for breakfast 3 White bread of refined flour baked on griddles same as in old country
II Milk Cream Cheese Butter Eggs	
1 Milk in form of a thick sour milk (goat s milk) Leban (Syrian) Matzoon (Armenian) 2 Sour milk and hard cheeses 3 No cream 4 Butter made of sheep s milk	1 Do not use enough milk Are suspicious *of bottled milk Pasteurized milk does* not make such good Matzoon 2 Sour milk and hard cheese used somewhat 3 No cream 4 No butter—will give both milk and butter to children when urged
III Vegetables and Fruits	
1 Abundance of vegetables stuffed with wheat or rice and meats or nuts, and cooked with oil and lamb broth (*squash peppers grape leaves cucumbers*, tomatoes eggplant etc) 2 Salads with olive oil and vinegar and free use *of olives* 3 Semi-tropical fruits in abundance (grapes dates figs oranges etc)	1 Plenty of vegetables used if money permits These are stuffed with wheat or rice with meat, nuts, beans etc then *cooked with oil and lamb broth* (peppers tomatoes cabbage and grape leaves cucumbers squash etc) 2 Few potatoes 3 Few fruits except dried apricot raisins etc

Factors Influencing Conditions in United States			
	These people lost... become laborers to any great extent. *They have push arts* fruit stores antique-rug shops are waiters rug repairers etc. Because of arts-and-crafts work at home they are not so lost without out-of-door work here. Under ordinary circumstances these people are usually independent although high cost of living often results in poorly balanced diet high in fats and starches and low in fresh vegetables fruits and milk. Have been hard hit by the depression. Results: overweight some malnutrition *and some constipation*	**IV Meats and Meat Substitutes**	
		1 Lamb (Kebab) is only meat used to any extent. It is usually barbecued over fire out of doors. Or is combined with cracked wheat or rice and stuffed into vegetables 2 Nuts are used with cracked wheat or rice in place of meat (pignolias pistachios etc.) 3 Dried beans peas and lentils used somewhat	1 Lamb (Kebab) is only meat used to any extent Is cooked on skewers or with wheat or rice Sometimes is ground and eaten raw with cracked wheat (Some chops no roasts etc.) 2 Combined with cracked wheat *or rice* served instead of potato stuffed into vegetables etc 3 Nuts are used in place of meat with cracked wheat and rice 4 Dried peas beans lentils used somewhat
		V Sweets	
		1 *Honey used for sweetening. Molasses made from grapes* 2 Few desserts except on special occasions 3 Paklava (pastry with nuts and honey) 4 Fruit compotes 5 Fruit candies and Turkish paste	1 *Both honey and sugar used for sweetening.* Molasses made from grapes 2 Use few desserts 3 Fruit compotes 4 Paklava (pastry with nuts and honey) or shredded wheat with nuts and honey bread and honey with cream can be *bought at restaurants* and bakeries 5 Apricot candy Turkish paste
		VI Miscellaneous—Oils Spices	
		1 Sheep's butter 2 Olive oil 3 Many and varied spices 4 Turkish coffee	1 Olive oil used a great deal 2 Many and varied spices *in* combination 3 Turkish coffee

SUMMARY

NATIVE BACKGROUND AND FOOD HABITS (*Continued*)

JEWISH PEOPLE—FROM RUSSIA, POLAND, GERMANY

BACKGROUND	
GEOGRAPHY AND CLIMATE (*Refrigeration and preservation of food* aside from some drying and pickling are almost unknown due to geographical factors making transportation etc difficult)	1 Russia Poland Germany 2 The Jewish race originated in Palestine and after the fall of the Temple they went all over the world driven from one country to another Jews are loyal to the country of their adoption
REASONS FOR COMING TO THE UNITED STATES (Emigrants from all countries are almost entirely from the peasant or land working class This is the group we are discussing here)	1 Depending upon country from which they come Since 1890 large percentage of Jews came from Russia and Poland Before that many came from Germany Persecution (note present conditions in (Germany) 3 Lack of educational opportunities etc 4 Lure of America land of liberty and opportunity
CHARACTER OF PEOPLE AND HOME LIFE	1 Although scattered over the earth the Jews are very race conscious 2 Very close and beautiful *home life* Emphasis on spiritual things 3 Unusually bright and intelligent as a whole 4 Ambitious somewhat emotional people especially the Russian Jew 5 Characteristics moulded by religious precepts and difficulties of generations driven from one place to another

FOOD HABITS	
NATIVE	IN AMERICA
I CEREALS BREADS STARCHES	
1 Barley Kasha (buckwheat) in soups Corn meal oats (Polish) 2 Noodles and other egg and flour mixtures 3 Dark rye bread (Russian and German) Pumpernickel (German and Russian) 4 Unleavened bread (matzoth) at Passover	1 *Oatmeal and farina used as breakfast food* 2 Barley Kasha (buckwheat) in soups 3 Noodles and other egg and flour mixtures 4 Rye bread and white seed rolls 5 Matzoth — unleavened bread — at the Passover
II MILK CREAM CHEESE BUTTER EGGS	
1 Use of milk dependent on country land workers usually have abundance of milk 2 *Cream cheese and cottage or pot cheese* 3 Sour cream on vegetables berries and in soups 4 Sweet butter 5 Eggs in soups noodles etc	1 Use milk plentifully if they can afford it 2 Cream cheese and cottage cheese 3 Sour cream if able to buy it 4 *Sweet butter preferred* 5 Eggs plain in soups noodles etc
III VEGETABLES AND FRUITS	
1 Root vegetables (onions beets turnips) cabbage etc cooked with meats and *in soups (Borsch)* 2 Some raw vegetables as lettuce, tomatoes cucumbers eaten with sour cream when available 3 Dried fruits (prunes, apricots peaches *pears cherries and apples)* 4 Pickled and salted vegetables (cucumbers tomatoes sauerkraut etc)	1 Root vegetables used in soups (Borsch) and with meats 2 Raw vegetables (lettuce cucumbers tomatoes etc) used frequently 3 Use potatoes with meat 4 Dried fruits oranges apples pears grapes plums etc 5 Pickled and salted cucumbers tomatoes relishes etc

		IV Meats and Meat Substitutes	
Factors Influencing Conditions in the United States	1 Thrifty, industrious and ambitious as a whole 2 Very few work in laboring jobs. Have own stores, peddlers, business such as tailoring, clothes-making, etc. 3 Financial problem not generally as acute with these people as in the case of Italians. H[illegible] with the depression 4 Inadequate income results in poorly balanced diet, high in starch and fat and very deficient in fresh fruits and vegetables. Many Jewish people are overweight and constipated and there is a higher incidence of diabetes than in any other race 5 Influence of religion must always be considered as it affects food habits and life as a whole. There are many *religious holidays and fast days*. Jewish people grew up leaning on the Old Testament their religious laws and compilations. Their laws were based upon interpretation of the Bible. There are precepts in the Bible for all Orthodox dietary laws	1 Meat and poultry in any country killed and prepared according to religious laws (Can eat only clean or Kosher meat (animals that chew the cud and divide the hoof). Beef, veal. Non-Jewish people from these countries also use pork 2 Cheaper cuts only used (Jews cannot use hind quarter of animal). Meat cooked with vegetables 3 Jews can not use meat and dairy products at same meal 4 Jews use a great deal of chicken, always on Sabbath eve (Friday) 5 Use meat soups 6 Use internal organs (chopped liver) 7 Fresh water, smoked, salted and pickled fish: *herring, salmon, pickerel, carp, whitefish* 8 Dried beans, split peas and lentils especially in soups	1 Meat and poultry chosen, killed and prepared according to religious law (Kosher) 2 Cheaper cuts used (hind quarters not used). Meat is boiled or cooked with vegetables 3 Cannot use meat and dairy products at same meal 4 *Use chicken especially on Sabbath eve* 5 Use meat soups 6 Use internal organs 7 Fresh-water fish, cod, haddock, smoked and salt fish, salmon 8 Dried peas and beans and lentils used especially in soups, etc.
		V Sweets	
		1 Rich pastry rolled with nuts and fruits (Streudel—German) 2 Dried *fruits (prunes, pears, cherries, etc.)* 3 Pancakes (Blintzen—Russian) 4 Cheese cake 5 Sponge cakes and macaroons (at Passover without wheat flour)	1 Rich pastry rolled with nuts and fruits (Streudel) 2 Dried fruits 3 Cheese cake 4 Sponge cakes and macaroons at Passover
Factors Influencing Conditions in the United States Religious Laws	1 *Genesis*. Noah taking animals from the ark clean (kosher), unclean (trafa). All animals eaten *must be kosher* or clean (animals that chew the cud and divide the hoof) and they must be killed and prepared in a prescribed manner *Exodus and Deuteronomy*. Must not seethe the kid in its mother's milk Orthodox Jewish people cannot use meat and dairy products at the same meal Separate utensils must be used in the preparation and serving of meat meals and milk meals 3 Cannot eat hind quarter of animal, for Jacob had his thigh injured when wrestling with the angels 4 No milk or dairy products can be eaten until 6 hours after meat 5 Must rinse mouth after eating fish before eating meat 6 No wild food can be eaten 7 No fish without scales can be eaten (no lobsters, clams, oysters, eels, etc.)	**VI Miscellaneous—Oils, Spices** 1 Chicken fat used extensively 2 Oil used some. Flaxseed oil (Polish) 3 Seasonings and many relishes (Horse-radish used somewhat)	1 Chicken fat, vegetable oil, Crisco 2 Highly seasoned food 3 Many relishes as horseradish

TABLE 5

WEIGHT HEIGHT AGE TABLES FOR MEN AND WOMEN*

Men

Height		Weights according to Age Period in Pounds								
Ft	In	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59
5	0	113	119	124	127	129	132	134	135	136
5	1	115	121	126	129	131	134	136	137	138
5	2	118	124	128	131	133	136	138	139	140
5	3	121	127	131	134	136	139	141	142	143
5	4	124	131	134	137	140	142	144	145	146
5	5	128	135	138	141	144	146	148	149	150
5	6	132	139	142	145	148	150	152	153	154
5	7	136	142	146	149	152	154	156	157	158
5	8	140	146	150	154	157	159	161	162	163
5	9	144	150	154	158	162	164	166	167	168
5	10	148	154	158	163	167	169	171	172	173
5	11	153	158	163	168	172	175	177	178	179
6	0	158	163	169	174	178	181	183	184	185
6	1	163	168	175	180	184	187	190	191	192
6	2	168	173	181	186	191	194	197	198	199

Women

Height		Weights according to Age Period in Pounds							
Ft	In	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59
5	0	115	118	121	124	128	131	133	134
5	1	117	120	123	126	130	133	135	137
5	2	120	122	125	129	133	136	138	140
5	3	123	125	128	132	136	139	141	143
5	4	126	129	132	136	139	142	144	146
5	5	129	132	136	140	143	146	148	150
5	6	133	136	140	144	147	151	152	153
5	7	137	140	144	148	151	155	157	158
5	8	141	144	148	152	155	159	162	163
5	9	145	148	152	156	159	163	166	167
5	10	149	152	155	159	162	166	170	173
5	11	153	155	158	162	166	170	174	177
6	0	157	159	162	165	169	173	177	182

The height includes ordinary shoes and the weight includes ordinary indoor clothing

* From the publications of the Metropolitan Life Insurance Company

TABLE 6

CONVERSION OF POUNDS TO KILOGRAMS

Pounds	Kilograms	Pounds	Kilograms	Pounds	Kilograms	Pounds	Kilograms	Pounds	Kilograms
22	10	55	25	105	48	140	64	175	79
25	11	60	27	110	50	145	66	180	82
30	13	65	29	115	52	150	68	185	84
35	16	70	32	120	55	155	70	190	86
40	18	75	34	125	57	160	73	195	89
45	20	85	39	130	59	165	75	200	91
50	22	95	43	135	61	170	77		

1 kilogram = 2.2 pounds

To convert pounds to kilograms divide the pounds by 2.2

TABLE 7

WEIGHT HEIGHT AGE TABLE FOR BOYS OF SCHOOL AGE†

Height (Inches)	Average Weight for Height (Pounds)	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years	19 Years
38	34	34	34													
39	35	35	35													
40	36	36	36													
41	38	38	38	38												
42	39	39	39	39	39											
43	41	41	41	41	41*											
44	41	44	44	44	44											
45	46	46	46	46	46	46										
46	48	47	48	48	48	48										
47	50	49	50	50	50	50	50									
48	53		52	53	53	53	53									
49	55		55	55	55	55	55	55								
50	58		57	58	58	58	58	58*	58							
51	61			61	61	61	61	61	61							
52	64			63	64	64	64	64	64	64*						
53	68			66	67	67	67	67	68	68*						
54	71				70	70	70	70	71	71	72					
55	74				72	72	73	73	74	74	74*					
56	78				75*	76	77	77	77	78	78	80*				
57	82					79	80	81	81	82	83	83*				
58	85					83	84	84	85	85	86	87				
59	89						87	88	89	89	90	90	90			
60	94						91	92	92	93	94	95	96			
61	99							95	96	97	99	100	103	106*		
62	104							100*	101	102	103	104	107	111	116*	
63	111							105	106	107	108	110	113	118	123	127
64	117								109	111	113	115	117	121	126	130
65	123								114	117	118	120	122	127	131	134
66	129									119	122	125	128	132	136	139
67	133									124*	128	130	134	136	139	142
68	139										134	134	137	141	143	147
69	144										137	139	143	146	149	152
70	147										143	144	145	148	151	155
71	152										148*	150	151	152	154	159
72	157											153	155	156	158	163
73	163											157*	160	162	164	167
74	169											160*	164	168	170	171

Age Years	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Average height inches														
Short	43	45	47	49	51	53	54	56	58	60	62	64	65	65
Medium	46	48	50	52	54	56	58	60	63	65	67	68	69	69
Tall	49	51	53	55	57	59	61	64	67	70	72	72	73	73
Average annual gain pounds														
Short	3	4	5	5	5	4	8	9	11	14	13	7	3	
Medium	4	5	6	6	6	7	9	11	15	11	8	4	3	
Tall	5	7	7	7	7	8	12	16	11	9	7	3	4	

Note—In order to extend the range of the tables so as to include weights of children who are taller or shorter than those in these groups there have been added as starred figures estimated weights All the other weights represent averages for each inch in height and age of the children observed in this study

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TABLE 8

WEIGHT HEIGHT-AGE TABLE FOR GIRLS OF SCHOOL AGE†

Height (Inches)	Average Weight for Height (Pounds)	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years
38	33	33	33												
39	34	34	34												
40	36	36	36	36*											
41	37	37	37	37*											
42	39	39	39	39*											
43	41	41	41	41	41*										
44	42	42	42	42	42*										
45	45	45	45	45	45	45*									
46	47	47*	47	47	48	48*									
47	50	49*	50	50	50	50	50*								
48	52		52	52	52	52	53*	53*							
49	55		54	54	55	55	56	56*							
50	58		56*	57	58	58	59	61	62*						
51	61			59	60	61	61	63	65						
52	64			63*	64	64	64	65	67						
53	68			66*	67	67	68	68	69	71*					
54	71				69	70	70	71	71	73*					
55	75				72*	74	74	74	75	77	78*				
56	79					76	78	78	79	81	83*				
57	84					80*	82	82	82	84	88	92*			
58	89						84	86	86	88	93	96*	101*		
59	95						87	90	90	92	96	100	103*	104*	
60	101						91*	95	95	97	101	105	108	109	111*
61	108							99	100	101	105	108	112	113	116
62	114							104*	105	106	109	113	115	117	118
63	118								110	110	112	116	117	119	120
64	121								114*	115	117	119	120	122	123
65	125								118*	120	121	122	123	125	126
66	129									124	124	125	128	129	130
67	133									128*	130	131	133	133	135
68	138									131*	133	135	136	138	138
69	142										135*	137*	138*	140*	142*
70	144										136*	138*	140*	142*	144*
71	145										138*	140	142*	144*	145

Age years	6	7	8	9	10	11	12	13	14	15	16	17	18
Average height, inches													
Short	43	45	47	49	50	52	54	57	59	60	61	61	61
Medium	45	47	50	52	54	56	58	60	62	63	64	64	64
Tall	47	50	53	55	57	59	62	64	66	66	67	67	67
Average annual gain pounds													
Short	4	4	4	5	6	6	10	13	10	7	2	1	
Medium	5	5	6	7	8	10	13	10	6	4	3	1	
Tall	6	8	8	9	11	13	9	8	4	4	1	1	

† Prepared by Bird T Baldwin, Ph D and Thomas D Wood, M D Reprinted by permission of the American Child Health Association

TABLE 9

DETERMINATION OF BASAL ENERGY REQUIREMENT

DuBois Body Surface Chart

(As prepared by Boothby and Sandiford of the Mayo Clinic)

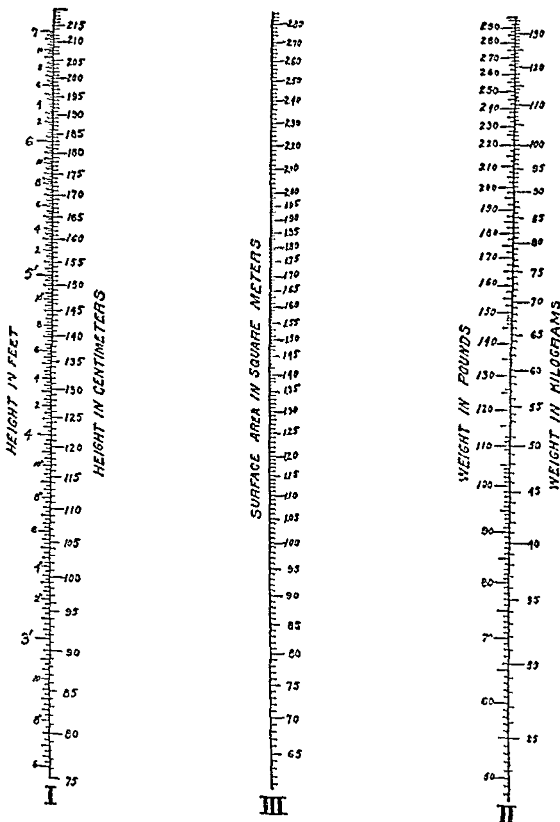


TABLE 10

DETERMINATION OF BASAL ENERGY REQUIREMENT

The Dubois Normal Standards* as Modified by Boothby and Sandiford (From the Mayo Clinic) Prelim Report Am J Physiol 1929, 90 291

Calories per Square Meter per Day

Age	Males	Females	Age	Males	Females
5	1272	1238	20–24	984	886
6	1265	1217	25–29	967	878
7	1248	1162	30–34	955	869
8	1229	1154	35–39	931	859
9	1210	1126	40–44	919	847
10	1188	1099	45–49	907	840
11	1166	1070	50–54	893	828
12	1147	1042	55–59	878	818
13	1130	1028	60–64	864	811
14	1109	984	65–69	847	802
15	1087	950	70–74	(835)	(787)
16	1073	924	75–79	(820)	(775)
17	1049	898			
18	1030	895			
19	1010	892			

* For convenience the Calories for the day have been given rather than Calories per hour as in the original table

Directions

To determine the Basal Requirement use Body Surface Chart, Table 9

Draw a line through the person s Height found in Column I and through the Weight in Column II

Using a straight edge draw a line between these two points

Read the Body Surface Area where this line intersects Column III

Refer to Table 10 using the age (nearest birthday) and sex read the calories needed per square meter per day multiply the surface area by this figure

The result is the Basal Energy Requirement in calories per day for the average person of this height weight age and sex

TABLE 11

ENERGY REQUIREMENT—ADULTS

Calories per Day for Various Grades of Activity per Kilogram of Body Weight

	Basal or Rest	Minimal	Very Light	Light	Moderate	Hard	Severe	Very Severe
	Occupation							
		Bedrest	Seamstress (hand) Typist Tailor	Seamstress (machine) Bookbinder Shoemaker Garment Worker Salesman Office Clerk Teacher	Laundress (moderate) Metal worker Furniture painter Housewife	Housemaid Carpenter Laundress (hard) Mechanic Truckman House worker	Stonemason Laborer Mason	Man sawing wood Fireman
Calories per kilogram of body weight per day Range	20 to 25	27 5	30–35	35–40	40–45	45–50	50–70	70–
Typical average weight M 70 kgm F 60 kgm			32 5	37 5	42 5	47 5	60–	
Per cent increase over basal Calories		10	25	50	75	100	150	200

Based on figures from Lusk Graham *Science of Nutrition* W B Saunders 1928

TABLE 12

ENERGY REQUIREMENT OF CHILDREN

TOTAL CALORIES FOR CHILDREN IN TERMS OF BODY WEIGHT*

Age in Years	Calories per kilogram		Calories per Pound	
1-2	100-90		45-50	
3-5	90-80		40-36	
6-9	80-70		36-32	
10-13	70-60		32-27	
	Boys	Girls	Boys	Girls
14-15	60-55	50-45	27-25	23-20
16-17	60-55	45-40	27-25	20-18
18-19	55-50	40-35	25-23	18-16

* Rose *Foundations of Nutrition*, Macmillan Co, 1938

TABLE 13

ENERGY REQUIREMENT OF CHILDREN

DAILY ENERGY ALLOWANCES DURING PERIOD OF GROWTH

Age of Individual (nearest birthday)	Boys		Girls	
	Average Caloric Intake of Moderately Active Boys*	Range in Requirement Based on Average Weight†	Average Caloric Intake of Moderately Active Girls	Range in Requirement Based on Average Weight†
1 year		900-1200		800-1000
2 years		1100-1300		1000-1250
3 years	1270	1100-1400	1245	1050-1350
4 years	1429	1200-1500	1362	1150-1400
5 years	1599	1300-1600	1532	1200-1500
6 years	1771	1500-1900	1641	1450-1800
7 years	1918	1600-2100	1757	1500-1900
8 years	2092	1700-2300	1867	1600-2200
9 years	2287	1900-2500	1932	1800-2400
10 years	2333	2100-2700	2001	1900-2600
11 years	2406	2100-2800	2096	2000-2800
12 years	2417	2300-3000	2185	2100-3000
13 years	2522	2500-3500	2381	2300-3400
14 years	2786	2600-3800	2409	2400-3000
15 years	3068	2700-4000	2337	2400-2800
16 years	3330	2700-4000	2285	2200-2800
17 years	3524	2700-3800	2122	2100-2800
18 years	3613			

* White House Conference on Child Health and Protection, *Growth and Development of the Child*, Part III, Nutrition, The Century Co, 1932

† Rose, *A Laboratory Handbook for Dietetics* 4th Ed, Macmillan Co, 1937

TABLE 14

TABLE OF HOUSEHOLD WEIGHTS AND MEASURES*

1 quart	=	4 cups and weighs about 960 grams
1 cup	=	½ pint = 240 grams = 8 fluid ounces
2 cups	=	1 pint
2 pints	=	1 quart
1 teaspoon	=	5 grams
1 dessert spoon	=	10 grams
1 tablespoon	=	15 grams
3 teaspoons	=	1 tablespoon
16 tablespoons	=	1 cup (standard measurement)

* All measurements are level

A rounded spoonful approximates usually 2 level spoonfuls
A heaping spoonful approximates usually 3 level spoonfuls

TABLE OF METRIC WEIGHTS

1 gram	= $\frac{1}{30}$ ounce (28 35 exact measurement)
$\frac{1}{1000}$ gram (0 001)	= 1 milligram
1 milligram	= 1000 micrograms
$\frac{1}{1\,000\,000}$ gram	= 1 microgram (1 gamma)
1 kilogram	= 1000 grams

To convert ounces to grams multiply the ounces by 30 (28 35 grams = 1 ounce)
To convert pounds to kilograms divide the pounds by 2 2
To convert kilograms to pounds multiply the kilograms by 2 2

APPROXIMATE WEIGHTS AND MEASURES OF FOODS

30 grams = 1 ounce = 2 tablespoons of the following

Barley, pearl dry	Lemon juice	Orange juice
Beans lima dried	Milk skim	Peas dried
Beans navy dried	Milk whole	Rice
Butter	Molasses	Sugar granulated
Buttermilk	Oil	Tapioca minute or pearl
Cream		

30 grams = 1 ounce = 3 tablespoons of the following

Cornmeal dry	Cornstarch	Wheat cream of dry

30 grams = 1 ounce = 4 tablespoons of the following

Flour white sifted	Cocoa	Oats rolled dry

30 grams = 1 ounce = 5 tablespoons of the following

Cocoanut dried

TABLE 14—*Continued*

ALCOHOLIC EQUIVALENTS

1 Cordial glass (fluid)	= 20 c c
1 Brandy glass (fluid)	= 30 c c
1 Sherry glass (fluid)	= 30 c c
1 Wine glass (fluid)	= 100 c c
1 Cup	= 240 c c

VITAMIN UNITS

1 International Unit of Vitamins A or D	= 1 United States Pharmacopeia Unit
1 Milligram of Thiamine	= 333 International Units
1 Milligram of Ascorbic Acid	= 20 International Units

Key United States Pharmacopeia—U S P
International Units—I U
Milligram—mg
Microgram—γ (gamma)

International Unit The content of vitamin in foods in terms of the activity of a definite quantity of a substance as a standard of reference, established by the Health Organization of the League of Nations

ABBREVIATIONS

av	average	hp	heaping	s d	sauce dish 5½" over all 3¾" across the bottom 1¼" deep
b	biscuit	J	juice	sl	slice
c	cup	L	large	sm	small
(C)	canned	lvs	leaves	sq	square
ck	cooked	m	medium	st	stalk
cu	cube	oz	ounce	str	strained
d	diameter	p	piece	t	teaspoon (level)
enr	enriched	pt	pat	T	tablespoon (level)
g	grams	r	rounded	wh	whole
gl	glass	s	serving		
gr	grated	sc	scant		
H	half				

AVERAGE SERVINGS*

	Household measure	Grams
Bread	1 slice	30
Cereals dry	½ cup	30
Cheese	2 tablespoons	30
Fruits dried		30
Fruits, fresh		100
Milk	1 glass or cup	240
Meat fish or poultry	3 ounces	90
Vegetables fresh	1 sauce dish	100
Vegetables dried (legumes)		30

* These amounts of food are the average servings referred to throughout the Tables and the Typical Diets and Menus

TABLE 15

FOOD VALUES AND MEASURES IN TERMS OF AVERAGE SERVINGS OF FOOD

The values for carbohydrate protein and fat were computed to the second decimal place and then rounded to the nearest whole or half gram if desired the half gram may be disregarded The calories were taken from these sources and rounded to the nearest whole number The vitamins from all sources varied so much an attempt was made to take figures that were most conservative and consistent When a range was given the median was used See p 109 for references

			Grams				Grams		Mgm	I U	Micrograms		Milligrams		I U
Grams	Foods	Household Measure	Carbohydrate	Protein	Fat	Calories	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Vitamin D
Beverages															
40	Cider Sweet	1 gl	30 0			170	0 010		0 6	13?	50	70		12	
180	Coca-Cola	1 bottle 6 oz	21 5			86									
24	Coffee	2 T													
240	Ginger ale	1 gl	21 5			86									
170	Grape Juice	½ gl	22 0	0 5		90	0 012	0 012	0 4		24	12		2	
4	Tea	1 t													
Beverages Alcoholic					Alcohol										
230	Ale American	1 gl 8 oz	8 0	1 0	9 0	99									
230	Beer average	1 gl 8 oz	9 0	1 5	10 0	112									
30	Brandy average	1 brandy gl			10 5	74									
20	Creme de Menthe	1 cordial gl	7 0		6 0	0									
20	Curacao	1 cordial gl	4 0		6 0	58									
30	Gin	1 brandy gl			10 5	74									
30	Rum	1 brandy gl			10	4									
30	Whiskey Scotch	1 brandy gl			10 5	74									
100	Wine California red	1 wine gl	0 5		10 0	72	0 009	0 015	0 3						
100	Wine California white	1 wine gl	4 0		10 5	90	0 009	0 015	0 3						
100	Wine champagne	1 wine gl	3 0		11 0	89									
30	Wine port	1 sherry gl	4 0		4 5	48									
30	Wine sherry	1 sherry gl	2 5		4 5	4[illegible]									
Bread and Flour Products					Fat										
—	Biscuits baking powder	1 2½ d	12 5	2 0	4 0	94	0 016	0 077	0 2	[illegible]	65	66	0 22		
44	Bread Boston Brown	1 sl	18 0	2 5	2 0	100	0 057	0 083	1 3		44	21			
30	Bread cracked wheat	1 sl	12 5	2 5	1 0	69	0 013	0 038	0 4		90	4			
30	Bread rye dark	1 sl	15 0	2 0	0 5	73	0 005		0 5		58	18			
30	Bread rye light	1 sl	16 0	2 5	0 5	79	0 007	0 044	0 5		40	10			
30	Bread white enriched (min.)	1 sl	16 0	2 5	0 5	79	0 020	0 030	0 3		66	5	0 27		
30	Bread whole wheat	1 sl	15 0	3 0	0 5	77	0 015	0 045	0 6		96	54	0 6[illegible]		
50	Doughnuts	1 L	26 5	3 5	10 5	215									
50	Griddle cakes white	1 4	13 5	2 5	1 5	78	0 076	0 036	0	85	19	51			2
—	Muffins cornmeal	1 2½ d	19 0	3 0	5 5	14[illegible]	0 030	0 0[illegible]3	0 4	290	96	91	0 24		
50	Muffins English	½ 3½	23 0	3 0	4 0	140									
—	Muffins plain	1 2½ d	19 0	3 0	5 5	14[illegible]	0 030	0 047	0 4	215	86	103	0 27		
—	Rolls white	1 2 d	16 5	2 5	2 5	99	0 021	0 03	0 3	[illegible]9	77	94	0 24		
7	Ry Krisp	1	5 0	1 0		24	0 004	0 028	1 2		23	6	0 11		
5	Toast melba	1 sl	4 0	1 0		20	0 004	0 008	0 1			5			
60	Waffles	1 6	19 0	5 0	13 0	213	0 059	0 084	0 6	17	45	128			8
Cereals															
30	Barley pearl dry	2 T (⅛ c ck)	22 0	2 5		98	0 005	0 057	0 6		150	36	0 45		—
30	Bran flakes	½ c	27 0	3 0	0 5	105	0 018	0 018	1 4		30	4[illegible]			
15	Corn popped	1 c	12 0	2 0	0 5	61									
30	Cornflakes	1½ c	[illegible]5 0	2 5		110	0 009	0 015	0 3			21	0 30		
30	Cornmeal yellow dry	3 T (½ c ck)	27 0	2 5	1 0	107	0 005	0 046	0 3	225	135	39	0 30		
30	Cream of wheat dry enr	3 T (½ c ck)	20 5	3 5	0 5	101	0 143	0 168	12 0		150				
30	Macaroni dry	¼ c (½ c ck)	27 0	4 0	0 5	109	0 006	0 044	0 4		15		0 11		

TABLE 15—*Continued*

Grams	Foods	Household Measure	Grams: Carbohydrate	Grams: Protein	Grams: Fat	Calories	Grams: Calcium	Grams: Phosphorus	Mgm: Iron	I U: Vitamin A	Micrograms: Thiamine	Micrograms: Riboflavin	Milligrams: Niacin	Milligrams: Ascorbic Acid	I U: Vitamin D
Cereals—Continued															
30	Maltex dry	2 T (¾ c ck)	23 0	5 0	0 5	117	0 016	0 081	1 1		50	48	1 42		
0	Noodles dry	¾ c (¾ c ck)	21 0	4 0	1 5	114	0 007	0 043	0 4		4		0 12		
30	Oats rolled dry Quaker	½ c (¾ c ck)	18 0	5 0	2 0	110	0 016	0 1?6	1 5		219	65	0 40		
10	Pablum	4 T	7 0	1 5	0 5	39	0 078	0 06	3 0		100	33			
30	Ralston dry	2 T (¾ c ck)	21 0	4 5	0 5	10?	0 015	0 10?	1 ?		195	30	1 35		
30	Rice brown dry	2 T (¾ c ck)	23 0	2 5	0 5	107	0 0?0	0 101	0 6		68	?4	2 07		
30	Rice puffed	2 c	25 0	2 0		108	0 003	0 030	0 3						
30	Rice white dry	? T (¾ c ck)	24 0	2 5	1 0	115	0 003	0 028	0 3		9				
30	Spaghetti dry	½ c (¾ c ck)	18 5	3 0	0 5	91	0 006	0 036	0 3				0 11		
15	Tapioca minute or pearl	1 T	13 0			5?	0 00?	0 001	0 2			15			
10	Wheat germ	1 T	5 0	2 5	1 0	39	0 007	0 105	0 7	40	300	70	0 30		
15	Wheat puffed	1 c	10 5	2 0		50	0 006	0 059	0 6			12			
30	Wheat shredded	1 b	24 0	3 5		110	0 014	0 1?5	1 0		81	55	1 50		
Crackers															
3	Crax (butter cracker)	1	3 5	0 5	1 0	25			0 1						
10	Graham	1 2½ sq	7 5	1 0	1 0	43	0 002	0 0?0	0 2		10				
10	Oysterettes	10	7 0	1 0	1 0	41									
4	Saltines	1 2 sq	3 0	0 5	0 5	19	0 001	0 004	0 1						
6	Uneeda	1 2½ sq	4 5	0 5	0 5	25	0 001	0 00?	0 1						
8	Zwieback	1	6 5	1 0	0 5	35	0 008	0 012	0 1						
Flour															
10	Cornstarch	1 T	9 0			36									
120	Rye flour medium	1 c	91 0	13 0	1 5	430	0 0?	0 347	1 6		230	7?	1 ?0		
100	Soy bean flour	1 c	12 0	37 5	20 0	378	0 216	0 583	2 7	250	900	600	4 80		
11?	White flour sifted	1 c	85 0	12 0	1 0	397	0 020	0 113	1 2		90	45	0 77		
112	White flour sifted enr max	1 c	85 0	1? 0	1 0	397	0 0?0	0 113	5 9		616	448	? 24		246
112	White flour sifted enr min	1 c	85 0	12 0	1 0	397	0 0 0	0 113	1 5		414	231	1 46		62
7	White flour sifted enr min	1 T	5 0	0 5		2	0 001	0 007	0 1		26	18	0 09		4
130	Whole wheat flour unsifted	1 c	93 5	18 0	2 5	469	0 046	0 398	4 6	13	555	325	3 50		
Dairy Products															
5	Butter	1 t			4 0	36	0 001	0 001		135[1]					5
15	Butter	1 T			12 0	108	0 002	0 00		405[1]					15
30	Cheese American (cheddar)	2 T or 1 oz	1 0	7 0	10 0	12?	0 ?79	0 210	0 3	450	7	165	0 06		
30	Cheese cottage (skim milk)	2 T	1 0	6 0		28	0 0 5	0 0 9	0 3	53		84			
30	Cheese cream	2 T		5 0	13 0	137	0 108	0 0 8	0 2	648	5	0	0 06		
30	Cream heavy 40%	2 T or 3½ T whip	1 0	1 0	11 5	112	0 0 4	0 019		638	9	4?			
1?0	Cream heavy 40%	½ c	4 0	4 0	46 0	446	0 096	0 0 6	0 2	2 5	36	168			
40	Cream heavy 40%	1 c	8 0	8 0	9? 0	89	0 19?	0 152	0 4	5 404	7?	336			
15	Cream light 0%	1 T	0 5	0 5	3 0	31	0 014	0 012		177	5	?5			
30	Cream light 20%	2 T	1 5	1 0	6 0	64	0 0 ?	0 0 4		354	10	50			
1?0	Cream light ?0%	½ c	6 0	4 0	4 0	?56	0 11?	0 096	0 2	1 416	40	200			
30	Egg white	1		3 0		12	0 004	0 005				69	0 0?		30
50	Egg whole	1		7 0	5 0	73	0 027	0 112	1 5	500	75	125	0 03		
18	Egg yolk	1		3 0	5 0	57	0 0?4	0 106	1 5	500	75	5	0 01		
240	Milk buttermilk	1 c	12 0	9 0	0 5	89	0 5?	0 233	0 7	3	78	19	0 19	3 0	
15	Milk condensed	1 T	8 0	1 0	1 5	49	0 045	0 035	0 1	4?	12	53	0 03		

[1] The vitamin A content of butter varies according to the season or the type of feed for the animals

TABLE 15—*Continued*

			Grams				Grams		Mgm	I U	Micro-grams		Milli grams		I U
Grams	Foods	Household Measure	Carbohydrate	Protein	Fat	Calories	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Vitamin D
Dairy Products—Continued															
30	Milk dried whole (powdered)	1 oz	11 0	8 0	7 5	144	0 287	0 212	0 5	258	75	450	0 33		
30	Milk evaporated	2 T	3 0	2 0	2 5	43	0 0 2	0 060	0 1	113	19	99		0 5	2[3]
120	Milk evaporated	½ c	12 5	9 0	10 0	1.6	0 299	0 240	0 5	450	78	396		1 5	6[3]
9	Milk malted	1 T	6 5	1 5	1 0	41	0 032	0 031	0 2	38	31	45			
30	Milk skim	2 T	1 5	1 0		10	0 036	0 0 8	0 1	3	13	60	0 03		
40	Milk skim	1 c	12 0	8 0	1 0	89	0 293	0 230	0 7	24	109	4 0	0 27	3 0	
30	Milk whole	2 T	1 5	1 0	1 0	19	0 036	0 078		58	16	65	0 03		
120	Milk whole	½ c	6 0	4 0	5 0	85	0 141	0 111	0 3	231	63	262	0 11	1 0	3
180	Milk whole	¾ c	9 0	6 0	7 0	123	0 213	0 168	0 3	345	93	393	0 13		3[5]
40	Milk whole	1 c	12 0	8 0	9 5	166	0 283	0 223	0 5	461	125	523	0 27	3 0	5[5]
960	Milk whole	1 qt	48 0	3 0	38 0	662	1 13	0 892	2 0	1 844	500	2 09	0 89	12 0	20[5]
Desserts[4]															
—	Cake angel	4½ × 3 3½ arc	48 0	5 0		212	0 007	0 020	0 2		52	114	0 21		
—	Cake plain	2 cu	26 0	2 0	4 0	448	0 018	0 032	0 3	154	62	69	0 20		
—	Cake sponge	4½ × 3 3½ arc	40 5	6 5	4 0	2 4	0 023	0 098	1 3	3 5	108	130	0 21		
—	Cake white	cu	33 5	2 5	4 5	185	0 016	0 025	0 2	153	5	71	0 19		
—	Cookies oatmeal	1 thin ½ d	13 5	2 5	1 5	78	0 008	0 056	0 7	30	91	3	0 16		
—	Cookies sugar	1 thin ½ d	5 0	0 5	1 0	31	0 00	0 006	0 1	44	16	13	0 05		
10	Gelatin	1 T		9 0		36									
—	Gingerbread	2 sq	45 0	4 0	7 5	64	0 083	0 041	3 2		117	8	0 41		
—	Ice orange	4 hp T	53 5			14	0 010	0 007	0 2	90	45	70	0 09	24 0	
100	Ice cream commercial vanilla	½ c	20 5	4 0	13 0	15	0 076	0 066	0 2	530	25	50			
100	Jello lemon	1 s	31 5	2 5		136	0 003	0 002	0 1		5		0 01	7 0	
—	Mousse chocolate	3 hp T	70 0	3 0	1 5	286	0 003	0 067	0 2	1 115	27	106	0 01		
—	Pie apple	⅛ pie	5 0	4 5	21 5	512	0 015	0 05	0 9	16	177	1 6	1 06	5 0	
—	Pie lemon meringue	⅛ pie	67 5	5 5	15 0	427	0 024	0 080	1 2	227	151	1 4	0 4	13 0	
—	Pudding bread	3 hp T	5 0	5 0	7 5	188	0 1 8	0 125	0 7	234	98	45	0 23	1 0	
—	Pudding cornstarch	3 r T	26 0	3 0	3 5	149	0 106	0 083	0 2	173	49	196	0 08	1 0	
—	Pudding custard	3 hp T	21 0	9 0	8 5	197	0 16	0 196	1 4	605	117	355	0 13	1 0	
—	Pudding tapioca	1 hp T	27 5	6 0	6 0	188	0 1.5	0 134	0 9	384	80	67	0 10	1 0	
—	Sherbet orange	4 hp T	57 0	2 5	3 0	265	0 095	0 074	0 3	278	83	173	0 16	44 0	
—	Shortcake peach	1 b 3 d	76 0	6 5	13 5	452	0 065	0 110	1 2	3 46	61	64	2 47	16 0	
—	Spanish Cream	3 hp T	13 5	6 5	5 0	1 5	0 098	0 113	0 7	343	69	71	0 08	1 0	
Fats															
15	French dressing	1 T	1 0		8 5	81									
15	Lard	1 T			15 0	135									
15	Mayonnaise (one egg recipe)	1 T	0 5		11 0	101	0 00	0 005	0 1	30	4	10			
15	Oil corn	1 T			15 0	135									
15	Oil cottonseed	1 T			15 0	135									
15	Oil olive	1 T			15 0	135									
15	Oleomargarine fortified	1 T			12 5	113	0 003	0 003		296					
Fish															
12	Anchovy (C)	3 sm		2 5	1 0	19	0 003	0 0 6	0 1						
100	Clams long (soft shelled)	6-10	2 0	13 5	1 5	76	0 123	0 105	4 1	100	45		1 08		
30	Cod	1 oz		5 5		22	0 003	0 123	0 1	4	22	45	0 60		
90	Cod	3 oz		16 0		64	0 009	0 365	0 3	1	66	144	1 80		
30	Cod salt dry	1 oz		8 5		34	0 008	0 0 6	0 1						

[3] More than ½ of the evaporated milk produced in this country is irradiated and contains not less than 34 U.S P units of vitamin D per ½ cup

[5] If the vitamin D content of milk has been increased by any method it will be indicated ranging from 135–400 I U per quart

[4] Recipes for the desserts are computed on pages 113 119

TABLE 15—*Continued*

Grams	Foods	Household Measure	Grams				Grams		Mgm	I U	Micrograms		Milligrams		I U
			Carbohydrate	Protein	Fat	Calories	Calcium	Phosphorus	Iron	Vitamin A	Thiamin	Riboflavin	Niacin	Ascorbic Acid	Vitamin D
Fish—Continued															
90	Cod salt dry	3 oz		26 0	0 5	109	0 025	0 227	0 5						
60	Crab (C)	½ C	0 5	9 5	1 0	49	0 009	0 108	0 6		81	210	1 68		
30	Flounder	1 oz		4 5		18	0 011	0 048	0 3		24	57	1 15		
90	Flounder	3 oz		13 0	0 5	57	0 033	0 144	0 9		72	171	3 46		
30	Haddock	1 oz		5 0		20	0 005	0 060	0 3		5	60	1 80		
90	Haddock	3 oz		15 0		60	0 015	0 180	0 9		15	180	5 40		
30	Halibut	1 oz		5 5	1 5	36	0 003	0 060	0 3		27	60	1 82		
90	Halibut	3 oz		16 5	4 5	107	0 009	0 180	0 9		81	180	5 4		
60	Herring pickled	1 sm		12 0	9 0	129									
90	Herring smoked	½		33 0	14 0	258	0 036	0 396	1 8	63	40	144			
90	Lobster meat	½ C sc	0 5	16 0	1 0	75	0 054	0 252	0 9		145	125		4	
30	Mackerel	1 oz		5 5	[illegible] 0	40	0 003	0 082	0 3	45	36	16	1 80		
90	Mackerel	3 oz		17 0	6 5	1[illegible]7	0 010	0 246	0 9	135	108	50	5 40		
30	Oysters raw	2 m	1 0	2 0	0 5	17	0 016	0 045	1 7	60	90		0 20		
90	Oysters raw	6 m	3 0	6 0	1 5	50	0 048	0 135	5 1	180	270		0 60		
30	Salmon fresh	1 oz		6 5	4 0	6	0 004	0 073	0 3	150	23	60	2 00		78
90	Salmon fresh	3 oz		19 5	12 0	186	0 01[illegible]	0 219	0 9	450	69	180	6 00		234
30	Salmon red (C)	¼ C		6 5	3 5	58	0 0[illegible]0	0 085	0 4	100*	20	67	2 00		150
90	Salmon red (C)	¾ C		19 5	10 5	1[illegible]3	0 060	0 255	1 2	300*	60	201	6 00		450
30	Salmon smoked	1 oz		6 5	3 0	53	0 020	0 085	0 4			50	1 80		
30	Sardines (C)	3 m		6 0	7 5	92	0 011	0 110	0 5	45	15		1 20		
90	Scallops	4 m	3 0	13 0		64	0 015	0 153	0 7	180	8	42			
30	Shad	1 oz		5 5	3 0	49	0 006	0 060	0 3						
30	Shrimp	3–4 m		7 0		8	0 0[illegible]8	0 051	0 4		27	43	0 23		
90	Smelts	2 L		16 0	1 5	78	0 013	0 182	0 9						
60	Tuna	⅓ c		16 0	7 0	127	0 0 1	0 174	0 8	120					
90	White fish	3 oz		20 5	6 0	136	0 015	0 183	0 9		81				
Fruits 5% Edible Portion															
100	Average Figure	1 sv	5 0	0 5		2[illegible]									
100	Avocado Fuerte	½ m	5 0	1 5	26 5	266	0 019	0 044	1 4	110	150	138		5	
100	Rhubarb	1 c	4 0	0 5		18	0 004	0 018	0 5	100	15			[illegible]	
100	Watermelon	2 × 2½ × 1½	7 0	0 5		30	0 007	0 013	0 2	50	30	15	0 10	7	
Fruits 10% Edible Portion															
100	Average Figure	1 sv	10 0	1 0		44									
100	Blackberries	1 s d	12 0	1 0	1 0	61	0 017	0 019	0 9	75	30			7	
100	Cantaloup (muskmelon)	½ m	9 5	0 5		40	0 016	0 018	0 7	1 000	50	60		30	
100	Cranberries	1 c	11 5	0 5	0 5	53	0 013	0 011	0 6	50			1 29	12	
20	Cranberry sauce (without sugar)	2 T	10 0			40	0 001			5				2	
100	Currants red	½ c	12 5	1 5	0 5	61	0 0 6	0 038	0 6		45			45	
100	Gooseberries	½ c	10 0	1 0	0 5	49	0 035	0 031	0 5					25	
100	Grapefruit fresh	½ m	10 0	0 5		42	0 021	0 020	0 3	21	75	60	0 [illegible]1	40	
100	Grapefruit juice (C) unsweetened	½ c sc	10 5	0 5		44	0 0 1	0 0[illegible]0	0 3	21	75	60	0 21	40	
100	Lemon fresh	1 L	8 5	1 0	0 5	43	0 0[illegible]	0 011	0 6		30			45	
100	Lemon juice	½ c sc	8 5	1 0	0 5	43	0 022	0 011	0 6		30		0 08	45	
100	Orange fresh	1 m	11 0	1 0		48	0 0[illegible]4	0 018	0 4	2.5	110	50	0 22	54	
100	Orange juice	½ c sc	12 5	0 5		52	0 024	0 018	0 4	225	110	50	0 2[illegible]	54	
100	Peach yellow fresh	1 m	1[illegible] 0	0 5		50	0 010	0 019	0 3	1 500	45	45	0 95	8	
100	Strawberries	10 L	8 0	0 5	0 5	39	0 023	0 023	0 9	75	20	10		38	
100	Tangerine	2 sm	11 0	1 0	0 5	53	0 041	0 018	0 3	252	86	22		27	

* Vitamin A figures of canned salmon per 30 grams range from 30 I U in pink to 100 in red to 2.5 in Chinook

TABLE 15—*Continued*

Grams	Foods	Household Measure	Grams: Carbohydrate	Grams: Protein	Grams: Fat	Calories	Grams: Calcium	Grams: Phosphorus	Mgm: Iron	I U: Vitamin A	Micrograms: Thiamine	Micrograms: Riboflavin	Milligrams: Niacin	Milligrams: Ascorbic Acid	I U: Vitamin D
	Fruits 15% Edible Portion														
100	Average Figure	1 av	14 0	0 5		58									
100	Apple	1 sm	14 0	0 5	0 5	63	0 007	0 012	0 4	72	40	30	0 50	6	
100	Apple juice	½ c	13 0			52	0 008		0 4	70	24	36		6	
100	Apricots fresh	3 m	13 0			52	0 015	0 024	0 6	4 500	40	105		5	
100	Blueberries	½ c	15 0	0 5	0 5	6	0 0.5	0 020	0 9	50	30	13		10	
100	Cherries	25 sm	15 0	1 0	0 5	69	0 017	0 072	0 6	150	45			8	
100	Grapefruit (C)	8 sections	14 0	0 5		58	0 021	0 020	0 3	21	75	60	0 30	40	
100	Grapes Tokay	20	15 0	1 0	1 0	73	0 015	0 021	0 7	40	34	9		2	
100	Nectarine	2 m	16 0	0 5		66	0 005	0 022	0 5	1 500	72			24	
100	Pear fresh	1 m	16 0	0 5	0 5	71	0 016	0 018	0 3	12	55	75	0 14	4	
100	Pineapple fresh	1 sl ½	14 0	0 5		58	0 016	0 011	0 3	50	100	65		18	
100	Pineapple juice (C)	½ c sc	13 0	0 5	0 5	59	0 018	0 010	0 1	50	75	25		7	
100	Plums	3 av	13 0	0 5		54	0 020	0 027	0 5	107	120	40	0 56	5	
100	Raspberries red	½ c	14 5	1 0	0 5	67	0 024	0 027	0 9	130	25			12	
	Fruits 20% Edible Portion														
100	Average Figure	1 av	19 0	0 5		78									
100	Figs fresh	3 m	20 0	1 5	0 5	91	0 053	0 036	0 9	75	90	82	0 63	2	
100	Peach yellow (C)	H 1 T juice	18 0	0 5		74	0 009	0 013	0 2	1 500	30	45		4	
100	Pears (C)	2 H 1 T juice	18 0	0 5	0 5	79	0 009	0 018	0 2	10	30	75			
100	Pineapple (C)	1 sl ½ 1 T juice	21 0	0 5		86	0 015	0 009	0 3	25	63	25		10	
	Fruits Over 20% Edible Portion														
100	Average Figure	1 av	25 0	0 5		10									
100	Apple sauce (C)	½ c	26 5	0 5		108	0 005	0 009	0 3	7	27	30		4	
100	Apricots (C)	4 sm H 1 T juice	25 0	0 5		10	0 009	0 014	0 4	4 088	21	79		2	
100	Banana	1 m	23 0	1 0		96	0 008	0 028	0 6	350	50	75	0 61	10	
100	Fruit cocktail (C)	½ c sc	26 0	0 5		106	0 014	0 019	0 4	493	57	66		4	
100	Prune juice	½ c sc	23 0			9	0 01	0 018	0 9						
	Fruits Dried Edible Portion														
0	Apricots	6 H	20 0	1 5		86	0 020	0 036	2 3	2 500	27	81		1	
30	Currants	2 T	21 5	1 0		90	0 023	0 041	0 8						
30	Dates	3-4	23 5	0	1 0	105	0 0??	0 018	1 0	90	23	14	0 6?		
30	Figs	2 sm	22 5	1 0		94	0 048	0 035	0 9	21	39	31	0 5?		
30	Peaches	2 H	21 5	1 0		90	0 018	0 036	1 8	1 100	12	60			
30	Prunes stoned	3 m	21 5	0 5		88	0 018	0 024	0 9	470	60	105			
30	Prunes Str (C) Heinz	2 T	8 0	0 5		34	0 010	0 010	0 5	60	13	4			
30	Raisins seeded	2 T	22 0	1 0	1 0	101	0 018	0 030	0 9	17	45	38	0 19		
	*Meats**														
30	Bacon	5 sl full length		3 0	19 5	188	0 00?	0 032	0 5		30	30	1 3		
30	Beef lean	1 oz		6 5	2 5	49	0 004	0 061	0 9		49	69	23		
90	Beef lean	3 oz		19 5	7 5	146	0 012	0 183	2 7	27	144	207	6 69		
30	Beef medium fat	1 oz		5 0	6 5	79	0 003	0 050	0 7		45	60	2 36		
90	Beef medium fat	3 oz		15 0	19 5	236	0 009	0 150	2 1		135	180	7 08		
90	Brain av	3 oz		9 5	8 5	115	0 008	0 098	2 1		225	233	5 40	8	
30	Ham lean	1 oz		7 5	4 5	71	0 006	0 072	0 9		304	75			

* The vitamin content of meat is given before cooking Like most other foods meat undergoes a change in its vitamin content on cooking the exact amount depending upon its method of preparation

Table showing % of vitamin lost in the cooking of meat

	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Roasting	30%	10%	5%	—
Broiling	25%	10%	5%	25%
Braising	35%	10%	10%	50%
Cooking in water	40%	13%	—	50%

[Adapted from chart of National Live Stock and Meat board]

TABLE 15—*Continued*

Grams	Foods	Household Measure	Carbohydrate	Protein	Fat	Calories	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Asc Acid	Vitamin D
			Grams				Grams		Mgm	I U	Micrograms		Milligrams		I U
Meat—Continued															
90	Ham lean	3 oz		22 5	13 5	212	0 018	0 216	2 7		912	225			
30	Ham medium fat	1 oz		5 0	10 5	115	0 003	0 045	0 7		180	65	2 64		
90	Ham medium fat	3 oz		15 0	31 5	344	0 009	0 135	2 1		540	195	7 92		
90	Heart av	3 oz		14 5	10 0	148	0 008	0 210	5 6		248	923	6 1?		
90	Kidney av	3 oz	1 0	13 5	7 5	1 6	0 015	0 255	5 8	849	225	1 680	4 14	6	
30	Lamb medium fat	1 oz		6 0	5 0	69	0 003	0 062	0 5		75	71	2 54		
90	Lamb medium fat	3 oz		18 0	15 0	207	0 009	0 186	1 5		2?5	213	7 62		
30	Liver beef	1 oz	0 5	6 0	1 5	40	0 003	0 113	2 4	9 000	120	900	4 ?2	11	
90	Liver beef	3 oz	1 5	18 5	4 5	121	0 010	0 340	7 4	27 000	360	00	14 18	33	
30	Liver calves	1 oz	1 0	5 5	1 5	40	0 003	0 113	1 6	8 100	120	990	4 ?0	9	
90	Liver calves	3 oz	3 0	17 0	4 5	121	0 010	0 340	4 9	24 300	60	? 970	14 11	29	
30	Liver lamb	1 oz	1 0	6 0	1 0	37	0 003	0 113	1 9	8 100	120	990	4 27	11	
90	Liver lamb	3 oz	3 0	18 5	3 0	113	0 010	0 340	5 9	24 300	360	? 970	12 83	33	
30	Liver pork	1 oz	0 5	5 5	1 0	33	0 003	0 113	9 1	8 100	128	810	5 13	8	
90	Liver pork	3 oz	1 5	17 0	3 0	101	0 010	0 340	27 3	?4 300	384	2 430	15 39	24	
30	Pork lean	1 oz		8 5	2 0	52	0 006	0 072	0 9		360	68			
90	Pork lean	3 oz		25 5	6 0	156	0 018	0 216	1 8		1 080	?04			
30	Pork medium fat	1 oz		4 5	9 5	104	0 003	0 065	0 7		3?0	85	2 64		
90	Pork medium fat	3 oz		13 5	28 5	311	0 009	0 195	2 1		960	195	6 9?		
30	Poultry dark	1 oz		6 5	1 5	40	0 006	0 06?	0 6		45	67	2 00		
30	Poultry light	1 oz		7 0	1 0	37	0 004	0 067	0 6		28	21	2 19		
90	Sweetbreads av	3 oz		10 5	30 0	312					3?	668			
90	Tongue av	3 oz		15 0	13 0	177	0 010	0 133	2 3		?57	200	5 47		
30	Veal lean	1 oz		6 0	3 0	51	0 003	0 063	0 9		68	77	2 10		
90	Veal lean	3 oz		18 0	9 0	153	0 009	0 189	2 7		204	231	6 30		
Miscellaneous															
10	Olive green	1 m	1 0		3 0	31	0 012	0 001	0 3	12	7	?5			
10	Olive ripe	2 sm	0 5		2 5	25	0 012	0 001	0 3	10					
20	Tomato ketchup	1 T	5 0	0 5		22	0 003	0 004	0 2						
100	Pickle dill	1 L	2 0	0 5		10									
30	Pickle sweet	1 sm	10 0			40									
—	White sauce thin	½ c	8 5	4 0	10 5	145	0 143	0 116	0 3	433	75	270	0 15		
—	White sauce med	½ c	5 5	2 0	8 5	107	0 072	0 060	0 2	315	44	138	0 10		
Nuts															
30	Almonds shelled	24-30	5 0	6 5	16 5	195	0 076	0 14?	1 2	174	54	150	0 55		
30	Brazil	4	3 0	4 5	?0 0	210	0 038	0 180	0 8	3	150				
30	Cocoanut dried	5 T	16 0	1 0	12 5	181	0 017	0 047	1 0		43				
30	Peanuts roasted	33-35	7 0	8 0	11 5	164	0 0?0	0 012	0 6	108	165	45	3 00		
30	Peanut butter	2 T	5 0	9 0	14 0	18	0 0?0	0 012	0 6	108	165	45	5 68		
30	Pecans shelled	24 H	4 5	3 0	21 0	219	0 0?6	0 100	0 8	90	150	90			
30	Walnuts shelled	16-32 H	4 0	5 5	19 5	214	0 027	0 107	0 6	15	135				
Soups															
40	Bouillon	1 c		6 0		24									
240	Consomme plain broth (C) Heinz	1 c		8 5		34	0 005	0 046	1 0						
240	Pea (C) Heinz	8 T + ½ c water	9 5	3 5	2 0	70									
240	Tomato (C) Heinz	8 T + ½ c water	15 0	2 0	2 0	86									
240	Vegetable with beef stock (C) Heinz	8 T + ½ c water	18 0	3 5	1 0	95									
Sweets and Candy															
30	Chocolate unsweetened	1 sq	9 0	4 0	14 5	183	0 0?7	0 136	0 8		23				
3	Cocoa dry	1 t	1 0	0 5	0 5	1	0 003	0 018	0 1						

TABLF 15—*Continued*

			Grams				Grams		Mgm	I U	Micro-grams		Milli grams		I U
Grams	Foods	Household Measure	Carbohydrate	Protein	Fat	Calories	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Vitamin D
Sweets and Candy—Continued															
9	Cocoa dry	1 T	3 0	1 0	2 5	40	0 009	0 057	0 2						
30	Honey	2 T sc	24 0			96	0 001	0 005	0 2		2	17	0 11		
20	Jelly	1 T	15 0			60									
100	Jelly	5 T	75 0	1 0		304									
30	Marmalade orange	1 hp T	25 5			102									
30	Molasses cane	2 T sc	21 0	0 5		86	0 07	0 009	2 8						
20	Sorghum	1 T	13 5			54									
30	Syrup corn l ght	2 T	26 0			104	0 003								
30	Syrup maple	1 r T	21 5			86	0 032	0 004	0 9						
11	Sugar brown	1 T	10 5			42	0 010	0 001	0 3						
11	Sugar confectioners	1 T	11 0			44									
15	Sugar granulated	1 T	15 0			60									
15	Sugar maple	1 pc 1	13 5			54	0 035	0 003	0 6						
12	Chocolate cream	1	9 0	0 5	2 0	56	0 003	0 014	0 1						
43	Chocolate Hershey plain	1 bar 5¢	4 0	3 0	14 5	239	0 096	0 089	1 1						
5	Chocolate Hershey almond	1 bar 5¢	17 0	3 0	13 5	˚0˚	0 072	0 087	1 0						
199	Chocolate Nestles semi sweet	17 oz bar	104 0	10 5	66 5	1 057									
33	Fondant	3 pieces	30 0			120									
30	Fudge	1 p ece	19 5	0 5	2 5	103	0 010	0 015	0 1	61	5	13			
30	Gum drop	3 L	29 5			118									
28	Marshmallow	4	ʌ5 0	1 0		104									
ʌ5	Peanut brittle	1 piece 2¼	17 0	3 0	4 5	1 1	0 007	0 039	0 2	36	50	˚0			
Vegetables															
100	Mushrooms	10 m					0 014	0 093	0 7		60	5		1	
Vegetables ˚5% Edible Portion															
100	Average Figure	1 s	4 0	1 5		22									
100	Asparagu fresh	8 st	4 0	2 0		24	0 0 1	0 040	1 0	500	165	100	0 51	27	
100	Asparagus (C)	7 st	3 0	2 0		20	0 016	0 0˚9	0 7	500	100	5		20	
100	Beans green string (C)	½ c	6 5	2 0		34	0 037	0 038	1 4	830	64	˚3			
60	Beans green string strai ed (C) He nz	4 T	2 0	1 0		12	0 031	0 018	0 6	680	2˚	41		3 5	
30	Beans soy dried	2 T	3 5	10 5	5 5	106	0 0˚5	0 176	5	30	360	˚25	1 23		
100	Bean sprouts	1 c sc	4 0	3 0	0 5	33	0 04	0 0ʌ4	1 0	35	30	120		160	
100	Beet greens	½ c	5 5	2 0	0 5	35	0 094	0 040	3 2	16 100	111	6 5		35	
60	Beets strained (C) Heinz	4 T	5 0	1 0		24	0 010	0 0˚0	1 0	28	8	18			
100	Broccoli e tire plant	½ c	5 5	3 5		36	0 140	0 069	1 4	6 000	90	350	1 20	65	
100	Cabbag partly green	½ c	5 5	1 5		2˚	0 046	0 031	0 4	55	105	100	0 ˚0	60	
100	C bbage Chinese	1 c	2 5	1 5		16	0 0ʌ0	0 044	1 0	000	76	35		40	
60	Carrots strained (C) Heinz	4 T	3 0	0 5		14	0 016	0 016	0 6	3 8 6	14	ʌ5		3	
100	Ca ılıflow er	½ c	5 0	2 5		30	0 025	0 0˚4	0 9	47	1˚5	185		71	
100	Celery bleached	4 st	4 0	1 5		˚˚	0 072	0 046	0 6	10	35	43		17	
100	Chard Swiss	½ c	5 0	1 5	0 5	31	0 100	0 050	3 1	9 000		75		15	
100	Cucumber	1 m	3 0	1 0		16	0 006	0 018	0 3	˚0	30	25	0 3	8	
100	Egg Plant	½ c	5 5	1 0		26	0 011	0 031	0 8	60	70	ʌ5	0 60	5	
100	Endive	2 st	4 0	1 5		2	0 104	0 039	1 ˚	3 850	100	236	0 72	12	
100	Escarole	4 lvs	4 0	2 0		24	0 074	0 039	1 8	15 000	110	250		8	

[7] Figures for vegetables are for fresh raw products unless otherwise indicated Mineral and vitamin losses will vary with the method of cookery Vegetables commercially canned or fro en lose negligible amou ts of their vitamin content The household measures given in cups are for the cooked product

TABLE 15—*Concluded*

Grams	Foods	Household Measure	Carbohydrate (Grams)	Protein (Grams)	Fat (Grams)	Calories	Calcium (Grams)	Phosphorus (Grams)	Iron (Mgm)	Vitamin A (I U)	Thiamine (Micrograms)	Riboflavin (Micrograms)	Niacin (Milligrams)	Ascorbic Acid (Milligrams)	Vitamin D (I U)
	Vegetables—Continued														
100	Kale	½ c	7 0	4 0	0 5	49	0 181	0 067	2 5	16 000	150	400		100	
100	Lettuce green leaf	10 lvs	3 0	1 0		16	0 069	0 028	1 5	5 000	75	150		15	
100	Lettuce head	¼ hd	3 0	1 0		16	0 017	0 040	0 5	100	75	45	0 50	13	
60	Peas strained (C) Heinz	4 T	5 0	3 0		32	0 006	0 048	1 0	738	72	70		7	
100	Pepper green	1 L	5 5	1 0		26	0 012	0 028	0 4	3 000	30	50	0 76	125	
100	Radishes	10	4 0	1 0		20	0 037	0 031	0 8	25	60	30	0 10	25	
100	Sauerkraut	½ c	5 0	1 5		26	0 039	0 009	0 3	25	20			5	
100	*Spinach fresh*	½ c	3 0	2 5	0 5	27	0 078*	0 046	2 5	18 000	100	400	0 72	50	
60	Spinach strained (C) Heinz	4 T	1 0	1 5		10		0 022	0 6	8 516	16	60		7	
100	Squash summer	½ c	4 0	0 5		18	0 018	0 015	0 4	300	42	81		3	
100	Tomato fresh	1 m	4 0	1 0	0 5	25	0 007	0 021	0 6	1 000	75	45	0 58	22	
100	Tomato (C)	½ c	4 0	1 0	0 5	25	0 007	0 015	0 4	1 000	75	45	0 55	22	
100	Tomato juice	½ c	4 0	1 0	0 5	25	0 007	0 015	0 4	1 000	75	45	0 10	22	
20	Tomato paste (C)	1 T	3 0	1 0		16	0 007	0 018	0 4						
60	Tomato strained (C) *Heinz*	4 T	3 0	0 5		14	0 005	0 010	0 3	690	45	30	0 06	12	
100	Watercress	1 sm bunch	3 0	2 0	0 5	25	0 157	0 046	3 0	2 000	125	220		55	
	Vegetables 10% Edible Portion														
100	Average figure	1 sv	8 5	2 0		42									
100	Artichoke French	½ L	12 0	3 5	0 5	67	0 040	0 094	1 0	225	100			9	
100	Beans green string fresh	½ c	7 5	2 5		40	0 065	0 044	1 4	1 000	75	110	0 64	25	
100	Beets fresh	2 m	9 5	1 5		44	0 024	0 041	0 9		30	50	0 64	15	
100	Brussels sprouts	7 sm	9 0	4 5	0 5	59	0 027	0 121	1 2	500	150			65	
100	Carrots fresh	1 L	9 5	1 0	0 5	47	0 045	0 041	0 6	6 000	100	90	1 47	4	
100	Dandelion greens	½ c	9 0	2 5	0 5	51	0 084	0 035	3 1	10 500	157	275		22	
100	Okra	10 pods	7 5	2 0		38	0 075	0 053	0 6	2 000	120			20	
100	Onions	2 m	10 0	1 5		46	0 038	0 044	0 5		30	50	0 10	15	
100	Peas (C)	4 T	10 0	3 0		52	0 016	0 106	1 3	588	236	130	1 30	6	
100	Pumpkin	½ c	7 5	1 0		34	0 023	0 046	0 9	2 000	45	45	0 70	5	
100	Rutabaga (yellow turnip)	½ c	9 0	1 0		40	0 074	0 056	0 5	28	30	35		30	
100	Squash winter	½ c	9 0	1 5	0 5	17	0 019	0 028	0 6	3 000	48	81		3	
100	Turnip white	½ c	7 5	1 0		34	0 051	0 032	0 5		30	30		30	
	Vegetables 15% Edible Portion														
100	Parsnips	½ c	14 0	1 5	0 5	67	0 060	0 076	0 8		155	75			
100	Peas fresh	½ c	17 5	6 5	0 5	101	0 023	0 127	2 1	1 000	400	200	1 35	25	
	Vegetables 20% Edible Portion														
100	Beans baked (C) with fat	3 r T	19 5	7 0	2 5	129	0 062	0 185	2 0	55	132	110			
30	Beans lima dried	2 T (½ c ck)	20 0	5 5	0 5	107	0 022	0 116	2 9	30	157	235	0 55		
30	Beans navy dried	2 T (½ c ck)	18 0	7 0	0 5	105	0 044	0 139	3 1		153	98	0 85		
100	Corn yellow fresh	1 m ear ½ c	20 5	3 5	1 0	105	0 006	0 103	0 5	600	135	60		10	
100	*Corn yellow (C)*	4 T	19 0	3 0	1 0	97	0 007	0 100	0 4	500	100	60		6	
30	Lentils dried	2½ T	18 0	7 5	0 5	107	0 031	0 115	2 6	15	150	95	0 93		
30	Peas dried	2 T (½ c ck)	18 5	7 5	0 5	109	0 023	0 123	1 8	225	158	90	0 30		
100	Potato white	1 sm	19 0	2 0		84	0 011	0 057	1 3	30	100	40	1 18	10	
	Vegetables Over 20% Edible Portion														
100	Beans lima fresh	½ c	23 5	7 5	1 0	133	0 0 8	0 133	2 4	300	300	175	0 29	30	
45	Potato chips	30 L	22 0	3 0	16 5	50	0 015	0 063	1 2	45	100	40			
100	Potato sweet	1 sm	28 0	2 0	0 5	125	0 030	0 052	1 0	3 500	90	75	1 29	20	

* Calcium of spinach is not available (see Sherman and Lanford Essentials of Nutrition 2nd ed Macmillan Co 1943)

Sources of figures used in Table 15

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TABLE 16

VARIED MENUS USING APPROXIMATELY THE SAME TOTAL FOOD FOR THE DAY

Breakfast

Fruit	Fruit	Fruit	Fruit	Fruit	Fruit
Cereal with milk and sugar			Cereal		Griddle cakes or waffles with butter and syrup or jelly
Bread or toast butter jelly	Bread or toast butter	Bread or toast butter jelly	Bread or toast butter jelly	Doughnuts	
Egg	Egg	Bacon or ham and egg			Bacon or sausage
Beverage	Beverage	Beverage	Beverage	Beverage	Beverage

Noon Meal

Cereal with cheese	Soup with cereal		Milk soup		
Vegetable salad with mayonnaise	Vegetable salad with cheese	Vegetable plate including potato	Fish or chicken salad with vegetables	Egg or meat sandwich	Vegetables au gratin
	Mayonnaise		Mayonnaise	Vegetable salad with mayonnaise	Crisp salad with dressing
Bread and butter	Rolls and butter	Rolls and butter	Rolls and butter		Rolls and butter
Fruit	Fruit ice	Fruit salad	Fruit gelatin	Fruit and cookies	Fruit and cookies
Milk	Milk	Milk	Beverage	Milk	Milk

Evening Meal

Broth with crackers		Broth with cereal	Tomato juice	Vegetable soup toasted crax	Consomme
Meat or fish	Meat or poultry	Meat or poultry with stuffing	Baked beans	Meat or poultry with dumplings	Meat or chicken pie with vegetables
Potato	Rice				
Vegetables 2-cooked	Vegetables cooked salad	Vegetables cooked celery olives	Cole slaw or crisp salad	Vegetables cooked	Vegetable cooked
Bread and butter	Bread and butter	Bread and butter	Brown bread and butter	Rolls and butter	Bread and butter
Fruit gelatin	Fruit pie	Ice cream	Fruit sherbet	Cereal pudding	Floating island
Cake					
Beverage	Beverage	Beverage	Beverage	Beverage	Beverage

TABLE 17

SUGGESTIONS FOR WAYS OF USING FOODS IN THE DIET*

	Milk	Meat Fish and Poultry			Eggs	Cheese	Fats
		Fresh Canned	Salt	Smoked			
Kinds of Food	Dried Evaporated Fresh Skimmed	Beef Pork Lamb Mutton Veal	Pork	Beef Pork		American Cottage with or without the fat Cream Others	Bacon Butter Oils Peanut butter Cheese (see cheese) Cream (see milk)
		Chicken Duck Turkey					
		Cod Flounder Haddock Halibut Herring Mackerel Salmon Shell fish	Cod Haddock Herring Mackerel Salmon	Haddock Halibut Herring Salmon			
Ways of Using the Foods	As a beverage Chocolate Eggnog Fruit juices Milk shakes Over cereals In boiled dressing In cereals In cream sauce In custards In puddings In vegetable or fish chowder In vegetable soup With fruits and berries In ice cream In junket In sherbets ——— *Cream* In beverages In frozen desserts Ice cream Mousse In gelatin desserts In soups With desserts Plain Whipped As sandwich fillings combined with fruits and nuts	As croquettes with white sauce crumbs and egg fried As hash with chopped vegetables As loaf with egg crumbs cereal and chopped vegetables As meat balls or fish cakes with egg bread crumbs and cereal As stuffing for vegetables combined with egg and cereal In chowder fish with milk and potatoes In pie with vegetables and biscuit crust In salad with egg fruit and vegetables In sandwiches with vegetables In soup with vegetables and cereals In stew meat with vegetables With cream or white sauce (cheese may be added) With cereals as macaroni spaghetti and rice (vegetables may be added)			As omelet combined with Cheese Jelly Vegetables Scrambled combined with Cheese Meat Tomatoes Stuffed combined with foods to flavor With cream sauce (cheese may be added) With bacon With toast In desserts Cakes or cookies Custard Frozen desserts Pudding In salad combined with meat fish vegetables chicken In sauces In mayonnaise	With cream sauce on toast noodles macaroni rice With omelets In cheese cake or pie In salads with fruits and vegetables In sandwiches alone or with vegetables In soups as flavoring With crackers and jelly	*Butter* On bread On cereals On potato On vegetables In puddings In sauces for both vegetables and desserts ——— *Peanut Butter* On bread In sandwiches In hot breads In cookies ——— *Bacon* With eggs meat and fish With vegetables hot or in salad ——— *Oils* *Dressings* Mayonnaise with egg French dressing with vinegar or lemon juice

* For recipes consult an authoritative cook book.

TABLE 17—*Continued*

	Cereals	Breads and Flours
Kinds of Food	Barley (pearled) Corn flakes Cornmeal Farina Grapenuts Hominy Macaroni Noodles Oats rolled Pettijohn Ralston Rice brown Rice polished Spaghetti Tapioca Wheat cracked Wheat shredded Wheatena	Cornmeal whole Cornstarch Graham Oatmeal Rye Wheat whole White
Ways of Using the Foods	As breakfast cereals (hot or cold) Fried mush Fritters Served with Fruits (fresh dried canned) Milk cream butter Molasses honey syrup In fritters In gruels In soups As a main dish Combined with meat fish egg or cheese Served with cream sauce (cheese may be added) tomato sauce As fried mush As dessert In cookies In puddings served with Milk cream butter Fruit (fresh dried canned) Molasses honey syrup Spices Sugar brown and white	*Breads* Sliced served with butter jelly honey peanut butter Sandwiches filled with Cheese or jelly Fruit (fresh dried) Mayonnaise Meat fish poultry Relishes Vegetables Toast foods served on Cheese and bacon (toasted together) Cream sauce (cheese may be added) Jelly honey butter Meat fish poultry (with or without gravy) Vegetables (creamed or buttered) Hot breads Muffins with dried fruits berries molasses Pancakes Popovers Scones Waffles Crackers Arrowroot cookies Butter varieties Cheese varieties Graham Oatmeal Rice wafers Ry Krisp Soda crackers Sweetened varieties Plain or frosted Combined with fruit nuts chocolate spices Whole wheat wafers In puddings *Flours* Cake Plain or frosted With or without fat In combination with nuts fruits chocolate spices and flavoring Cookies Plain or frosted In combination as above Doughnuts Pie

With few exceptions breads and cereals are enriched or fortified to the whole grain nutritive value

TABLE 17—*Concluded*

	Vegetables				Fruits		Sweets
	Fresh or Canned			Dried			
	Green Leafy	Yellow	Others	Legumes	Fresh Canned	Dried	
Kinds of food	Beet greens Brussels sprouts Cabbage Chard Dandelion greens Lettuce Spinach	Carrots Corn yellow Parsnips Potato sweet Squash Turnip	Asparagus Beans lima Beans string Beets Cauliflower Celery Corn white Cucumbers Eggplant Onion Peas green Peppers Potatoes white Radishes Tomatoes	Beans Lentils Peas	Apple Banana Berries Grapefruit Lemon Orange Peach Pear Pineapple Rhubarb Tomato	Apples Apricots Dates Figs Peaches Prunes Raisins	Honey Molasses Sugar brown Sugar white Syrup
Ways of using the foods	Salads (raw or cooked) Combined with Cheese nuts eggs Fruit Meat fish poultry *Dressing*— French mayonnaise boiled or variations Served with Butter Cream thin Sauce white (cheese may be added) *Scalloped with* Crumbs and butter In soups with Meat fish poultry (cereals may be added) In chowders and stews with Fish and milk Meat In sandwiches with Butter and dressing (cucumbers lettuce onion young spinach tomato watercress) As pickles and relishes			Combined with Meat vegetables Baked with Added fats Fat meat Molasses Brown sugar In scalloped dishes In soups (Cheese or meat may be added) *In sandwiches* (Baked beans)	Candies Desserts Frozen Mousse Sherbet Gelatin Pies Puddings Shortcake Juice With or without pulp In salads combined with Cheese and nuts In sandwiches combined with Cheese and nuts In sauces for Meat fish desserts Preserved as Jam jelly marmalade Whole Raw or cooked With cereals		*Molasses* In baked beans In gingerbread In ginger cookies On bread On cereal *Sugar* In desserts In candy In jelly In preserves On cereals On fruit *Honey and Syrup* Used as molasses

TABLE 18

METHOD OF COMPUTING THE FOOD VALUE OF A RECIPE AND THE COMPUTED FOOD VALUE OF SOME COMMONLY USED RECIPES*

The recipe should be taken from an authoritative cook book

Steps in computing the food value of a recipe

1 List the foods used in the recipe stating the amounts in both grams and household measures
2 From the Table of Food Values and Measures (Table 15) ascertain for each ingredient the units of carbohydrate protein fat calcium phosphorus iron and the vitamins Arrange these figures in tabulated form similar to example given If it is desired to know the sodium chloride content or excess acid or alkaline ash of the recipe the values can be calculated from Tables 40 46 and 47
3 Total the amount of each of the food constituents of the various foods
4 To determine the number of calories in the recipe multiply the grams of carbohydrate and of protein by 4 and the number of grams of fat by 9 Total these figures
5 To determine the food value of one serving divide these total figures by the number of servings the recipe makes

After computing several recipes or diets one is able to evaluate them in approximate amounts

Example Recipe for Gingerbread

Foods	Household Measure	Grams				Calories	Grams		Milli grams	I U	Micro-grams	Micro-grams	Milli grams	Milli grams
		Amount	Carbohydrate	Protein	Fat		Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic *Acid*
Molasses	1 cup	240	168	4		688	0 616	0 072	22 4					
Flour white	2¼ cups	25	191	27	2	890	0 045	0 254	3 4		93	655	3 [illegible]	
Fat (lard)	4 tablespoons melted	60			60	540								
Soda	1 teaspoon													
Ginger	1½ teaspoons													
Salt	½ teaspoon													
Boiling water	½ cup													
	8 servings		359	31	62	2 118	0 661	0 326	25 8		932	655	3 [illegible]	
	1 serving		44 8	3 8	7 7	265	0 083	0 041	3 2		117	8	0 41	

Method Mix and sift soda ginger and salt with flour Add water to molasses and to this add slowly sifted flour Add melted shortening and beat well Bake in shallow greased pan in a moderate oven for about 25 minutes

* Recipes are taken from *Good Cooking* Heseltine and Dow Houghton Mifflin Company 1933 The food values were computed from the Table of Food Values and Measures (Table 15)

TABLE 18—*Continued*

Foods	Household Measure	Grams				Calories	Grams		Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
		Amount	Carbohydrate	Protein	Fat		Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Breads														
Biscuit														
Flour	2 c	224	170	24	2	794	0 040	0 226	3		828	58?	2 9	
Milk	⅔ c	160	8	5 5	6 5	114	0 188	0 148	0 3	306	83	348	0 14	
Fat (lard)	3 T	45			45	405								
Salt	½ t													
Baking powder	3 t													
14 biscuits	2½ d		1?8	29 5	53 5	1313	0 2?8	0 374	3 3	306	911	930	3 06	
1 biscuit	2½ d		12 6	2 1	3 8	94	0 016	0 027	0 2	22	65	66	0 22	
Muffins plain														
Flour	2 c	2?4	170	24	2	794	0 040	0 226	3		8 8	58?	2 92	
Egg	1	50		7	5	73	0 027	0 112	1 5	500	75	125	0 03	
Fat (butter)	¼ c melted	60			48	432	0 008	0 008		16 0				
Milk	1 c	240	12	8	9 5	166	0 ?83	0 223	0 5	461	125	523	0 2?	
Sugar	3 T	45	45			180								
Salt	½ t													
Baking powder	?½ t													
12 muffins medium	2¾ d		2?7	39	64 5	1645	0 358	0 569	5	2581	10?8	12 0	3 17	
1 muffin medium	2¾ d		19	3 2	5 5	137	0 030	0 047	0 4	215	86	103	0 27	
Muffins cornmeal														
Flour	1 c	112	85	12	1	397	0 0 0	0 113	1 5		414	291	1 46	
Cornmeal	¾ c	120	88	10	4	428	0 0 0	0 184	1 ?	900	540	156	1 ?0	
Egg	1	50		7	5	73	0 0?7	0 112	1 5	500	75	125	0 03	
Milk	*1 c*	*240*	*12*	*8*	*9 5*	*166*	*0 83*	*0 2?3*	*0 5*	*461*	*1?5*	*5 3*	0 2	
Fat (butter)	¼ c melted	60			48	43	0 008	0 008		16 0				
Sugar	3 T	45	45			180								
Baking powder	2½ t													
Salt	½ t													
1? muffins	2½ d		?30	37	67 5	16?6	0 358	0 640	4 7	3481	1154	1095	2 91	
1 muffin	2½ d		19 2	3	5 6	140	0 030	0 053	0 4	290	96	91	0 24	
Rolls														
Flour bread	2½ c	280	212 5	30	2 5	993	0 050	0 28?	4		1035	7 8	3 65	
Sugar	2 T	30	30			1 0								
Fat (lard)	2 T	*30*			*30*	*270*								
Milk scalded	1 c	240	1	8	9 5	166	0 2?3	0 2?3	0 5	461	1?5	5?3	0 22	
Yeast cake	1	14	2	2		16					69	5?		
1? to 17 rolls	2 d		*256 5*	40	*42 0*	*1562*	*0 333*	*0 505*	*4 5*	*461*	*1? 9*	*1503*	3 87	
1 roll	2 d		16 3	2 5	2 6	91	0 021	0 032	0 3	9	?7	94	0 24	
Cakes														
Plain Cake														
Fat (butter)	4 T	60			48	432	0 008	0 008		16?0				
Sugar	1 c	240	240			960								
Flour cake	2 c	224	170	24	2	794	0 040	0 2?6	3		828	582	2 9	
Egg	1	*50*		*7*	*5*	*?3*	*0 0 7*	*0 112*	*1 5*	*500*	75	125	0 03	
Milk	¾ c	180	9	6	7	123	0 213	0 168	0 3	345	93	393	0 18	
Baking powder	2½ t													
Salt	¼ t													
Vanilla	1 t													
16 cup cakes or an 8 inch cake			419	37	6?	238?	0 288	0 514	4 8	2465	996	1100	3 13	
1 cup cake or a 2-inch cube			26 2	2 3	3 9	149	0 018	0 032	0 3	154	62	69	0 20	

TABLE 18—*Continued*

Foods	Household Measure	Grams				Calories	Grams		Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
		Amount	Carbohydrate	Protein	Fat		Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Cakes—Continued														
White Cake														
Butter	⅓ c	80			64	5 2	0 011	0 011		2147				
Sugar	1½ c	360	360			1 440								
Flour cake	2 c	224	170	24	2	794	0 040	0 226	3		8 9	582	2 92	
Milk	⅔ c	160	8	5 5	6 5	114	0 188	0 149	0 3	306	83	343	0 14	
Egg whites	3	90		9		36	0 012	0 015				207	0 06	
Baking powder	1½ t													
Salt	½ t													
Vanilla	½ t													
16 cup cakes or an 8-inch cake			538	38 5	72 5	2956	0 251	0 400	3 3	2453	911	1137	3 12	
1 cup cake or a 2-inch cube			33 6	2 4	4 5	185	0 016	0 025	0 2	153	57	71	0 19	
Angel Cake														
Egg white	1 c (8-9)	2 0		27		108	0 036	0 045				6?1	0 18	
Sugar	1½ c	300	300			1200								
Flour cake	1 c	112	85	12	1	397	0 020	0 113	1 5		414	291	1 46	
Salt	¼ t													
Cream of tartar	1 t													
Vanilla	½ t													
Almond extract	¼ t													
9-inch cake 3 inches deep—8 servings			385	39	1	1 05	0 056	0 158	1 5		414	91	1 64	
1 serving 3½ inch arc 4½ by 3 inches			48 1	4 9	0 1	213	0 007	0 0?0	0 2		52	114	0 21	
Sponge Cake														
Eggs	6	300		42	30	438	0 162	0 672	9	3000	450	750	0 18	
Sugar	1 c	240	240			960								
Flour cake	1 c	112	85	12	1	397	0 0?0	0 113	1 5		414	?91	1 45	
Salt	¼ t													
Lemon rind	½ gr													
Lemon juice	1 T	13	1			4	0 003	0 001	0 1		3		0 01	5
9-inch cake 3 inches deep—8 servings			3 6	54	31	1799	0 185	0 786	10 6	3000	867	1041	1 65	5
1 serving 3½ inch arc 4½ x 3 inches			40 7	6 7	3 9	25	0 023	0 098	1 3	375	108	130	0 21	0 1
Gingerbread														
Shortening (lard)	⅓ c	80			80	7 0								
Molasses	⅓ c	80	55	1		?29	0 205	0 0 4	7 4					
Sugar	⅓ c	80	80			3 0								
Eggs	1	50		7	5	73	0 0?7	0 11?	1 5	500	75	1 5	0 03	
Flour	1 c	112	85	12	1	397	0 0?0	0 113	1 5		414	?91	1 45	
Boiling water	½ c													
Salt	½ t													
Soda	¾ t													
Baking powder	½ t													
Ginger	1 t													
Cinnamon	½ t													
8 servings			2?1	20	86	1739	0 25-	0 249	10 4	500	489	416	1 49	
1 serving	2 cu		27 6	2 5	10 7	217	0 03	0 031	1 3	63	61	5	0 19	

TABLE 18—*Continued*

Foods	Household Measure	Amount	Carbohydrate	Protein	Fat	Calories	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
		Grams					Grams		Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
Cakes—Continued														
Gingerbread low cost†														
Fat (lard)	4 T melted	60			60	540								
Molasses	1 c	240	168	4		688	0 616	0 072	22 4					
Flour	2½ c	25?	191	27	2	890	0 045	0 254	3 4		93?	655	3 29	
Soda	1 t													
Salt	½ t													
Ginger	1½ t													
Boiling water	*¾ c*													
8 servings			359	31	62	2118	0 661	0 326	?5 8		93?	655	3 29	
1 serving	2 cu		44 9	3 9	7 7	265	0 083	0 041	3 2		116	8?	0 41	
Cookies														
Sugar Cookies														
Butter or oleomargarine	½ c	120			96	864	0 016	0 016		3240				
Sugar	¾ c	180	180			720								
Egg	1	50		7	5	73	0 027	0 112	1 5	500	75	1?5	0 03	
Milk	2 T	30	1 5	1	1	19	0 036	0 0?8		58	16	65	0 03	
Flour	3 c	336	255	36	3	1191	0 060	0 339	4 5		1242	873	4 38	
Baking powder	1 t													
Vanilla	*1 t*													
85 very thin cookies	2½ d		436 5	44	105	?867	0 139	0 495	6	3798	1333	1063	4 44	
1 very thin cookie	2½ d		5 1	0 5	1 2	34	0 00?	0 006	0 1	44	16	13	0 05	
Oatmeal Macaroons														
Egg	1	50		7	5	73	0 0?7	0 112	1 5	500	75	125	0 03	
Sugar	½ c	120	120			480								
Butter melted	2 t	10			8	72	0 00?	0 002		270				
Rolled Oats uncooked	2 c	240	144	40	16	880	0 128	1 008	12		175	520	3 ?0	
Salt	½ t													
Vanilla	½ t													
20 very thin cookies	2½ d		264	47	29	1505	0 157	1 1?2	13 5	770	18 7	645	3 23	
1 very thin cookie	2½ d		13 4	2 3	1 4	75	0 008	0 056	0 7	39	91	32	0 16	
Pastry														
Apple Pie														
Crust for 2 crust pie														
Flour	1½ c	168	127 5	18	1 5	593	0 030	0 170	2 3		621	437	2 19	
Fat (lard)	6 T	90			90	810								
Salt	½ t													
Water	6 T													
5 servings			127 5	18	91 5	1403	0 030	0 170	2 3		6?1	437	2 19	
1 serving			25 5	3 6	18 3	281	0 006	0 036	0 4		124	87	0 44	
Filling														
Apples	4 m	600	84	4	4	388	0 044	0 072	2 4	432	240	180	3	24
Sugar	¾ c	160	160			640								
Flour	1 T	7	5	0 5		2?	0 001	0 007	0 1		26	18	0 09	
Butter	1 T	15			12	108	0 002	0 002		405				
Water	1- T													
Lemon cinnamon nutmeg as desired														

† Stern and Spitz *Food for the Worker* M Barrows and Company 1917

TABLE 18—*Continued*

Foods	Household Measure	Grams				Calories	Grams		Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
		Amount	Carbohydrate	Protein	Fat		Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Pastry—Continued														
5 servings			249	4 5	16	1158	0 047	0 091	2 5	837	266	199	3 09	24
1 serving			49 8	0 9	3 2	23	0 009	0 016	0 5	167	53	39	0 62	5
Total for 8-inch pie			3 6 5	22 5	107 5	2561	0 077	0 231	4 8	837	887	635	5 29	24
Total for 1 serving	⅕ pie		15	4 5	21 5	513	0 015	0 052	0 9	167	177	126	1 06	5
Lemon Meringue Pie														
Crust														
Flour	1 c	112	85	12	1	397	0 0 0	0 113	1 5		414	291	1 46	
Fat	4 T	60			60	540								
Salt	¼ t													
Water	4 T													
1 crust 8-inch pie	5 servings		85	12	61	937	0 0?0	0 113	1 5		414	291	1 46	
1 serving	⅕ pie		17	2 4	1 4	187	0 004	0 0 2	0 3		83	58	0 29	
Filling														
Lemon juice	1 c	200	17	2	1	86	0 044	0 0??	1 2		60		0 16	90
Egg yolks	2	36		6	10	114	0 048	0 212	3	1000	150	104	0 0?	
Sugar	¾ c	180	180			720								
Flour	5 T	35	25	2 5		110	0 005	0 035	0 5		130	90	0 45	
Butter	1 t	5			4	36	0 001	0 001		135				
Water boiling	1 c													
Lemon rind grated	1													
Salt	¼ t													
5 servings			22?	10 5	15	1066	0 098	0 270	4 7	1135	340	194	0 63	90
1 serving			44 5	2 1	3	213	0 019	0 054	0 9	2?7	68	39	0 1	18
Meringue														
Egg white	2	60		6		24	0 008	0 010				138	0 04	
Sugar	2 T	30	30			1 0								
Salt	¼ t													
5 servings			*30*	*6*		144	*0 008*	*0 010*				138	*0 04*	
1 serving			6	1		29	0 001	0 00				27	0 01	
Total for 1 pie	8 d		337	28 5	76	2147	0 1?6	0 393	6 2	1135	754	623	? 13	90
Total for 1 serving	⅕ pie		67 5	5 7	15 2	429	0 0 4	0 080	1 2	227	151	1 4	0 42	18
Peach Shortcake														
Crust														
Flour	1½ c	168	127 5	18	1 5	593	0 030	0 170	2 3		6 1	437	2 19	
Butter or fat	4 T	60			48	432	0 008	0 008		16?0				
Milk	½ c	120	6	4	5	85	0 141	0 111	0 3	231	63	2?3	0 11	1
Sugar	1 T	15	15			60								
Baking powder	2 t													
Salt	½ t													
4 servings			148 5	2	54 5	1170	0 179	0 289	2 6	1551	684	693	2 30	1
1 serving	3 cake		37 1	5 5	13 6	29	0 045	0 0?2	0 6	46	171	174	0 57	
Filling														
Peaches	8 m	800	96	4		400	0 080	0 15_	2 4	12000	360	360	7 60	64
Sugar	4 T	60	60			240								
4 servings			156	4		640	0 080	0 15_	2 4	1?000	360	360	7 60	64
1 serving			39	1		160	0 0?0	0 038	0 6	3000	90	90	1 90	16
Total for 4 servings			304 5	26	54 5	1810	0 59	0 441	5 0	13551	1044	1059	9 90	65
Total—1 shortcake	3 x 2½ d		6 1	6 5	13 6	45	0 065	0 110	1 2	345?	?61	54	2 47	15

TABLE 18—*Continued*

Foods	Household Measure	Grams				Calories	Grams		Milligrams	I U	Micrograms	Micrograms	Milligrams	Milligrams
		Amount	Carbohydrate	Protein	Fat		Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Puddings														
Bread Pudding														
Milk	2 c	480	24	16	19	332	0 566	0 446	1 0	92?	250	1046	0 44	
Bread crumbs or cubes	1 c	75	40	6	12 5	198	0 050	0 075	0 8		165	130	0 68	
Sugar	½ c	60	60			240								
Egg	1 or 2 yolks	18		3	5	57	0 0?4	0 106	1 5	500	,5	5?	0 01	
Salt	¼ t													
Vanilla	½ t													
5 servings			124	25	36 5	8?7	0 640	0 6?7	3 3	14?2	490	12?3	1 13	
1 serving	3 hp T		24 8	5	7 3	185	0 128	0 125	0 7	284	98	245	0 23	
Cornstarch Pudding														
Milk	¼ c cold	60	3	2	2 5	43	0 070	0 055	0 1	115	31	131	0 05	
Milk	1¼ c scalded	300	15	10	12	209	0 353	0 278	0 6	576	156	654	0 27	
Cornstarch	3 T	30	27			108								
Sugar	¼ c	60	60			240								
Salt	¼ t													
Vanilla	1 t													
4 servings			105	12	14 5	600	0 423	0 333	0 7	691	187	785	0 3?	
1 serving	3 r T		26 2	3	3 6	150	0 106	0 083	0 2	173	49	196	0 08	
Custard														
Egg	3	150		21	15	219	0 081	0 336	4 5	1500	2 5	375	0 09	
Milk scalded	2 c	480	24	16	19	332	0 566	0 446	1	9??	250	1046	0 44	
Sugar	¼ c	60	60			240								
Salt	¼ t													
Vanilla	½ t													
4 servings			84	37	34	791	0 647	0 782	5 5	24?2	475	1421	0 53	
1 serving	3 hp T		21	9 2	8 5	198	0 16?	0 196	1 4	605	117	355	0 13	
Tapioca Cream														
Milk scalded	2 c	480	24	16	19	332	0 566	0 446	1 0	92?	250	1046	0 44	
Tapioca minute	2½ T	38	32 5			130	0 005	0 003	0 5			38		
Eggs	2	100		14	10	146	0 054	0 224	3 0	1000	150	250	0 06	
Sugar	⅓ c	80	80			3?0								
Salt	¼ t													
Vanilla	½ t													
5 servings			136 5	30	?9	9 8	0 6?5	0 673	4 5	19 2	400	1334	0 50	
1 serving	1 hp T		27 3	6	5 8	186	0 125	0 134	0 9	384	80	267	0 10	
Gelatin Desserts														
Lemon Jelly														
Gelatin	1 T	*10*		*9*		36								
Lemon juice	¼ c	67	5 5	0 5		29	0 014	0 007	0 4		20		0 05	30
Sugar	½ c	120	120			480								
Water cold	¼ c													
Water hot	1¼ c													
4 servings			1?5 5	9 5		545	0 014	0 007	0 4		20		0 05	30
1 serving	1 hp T		31 4	2 4		136	0 003	0 002	0 1		5		0 01	7
Spanish Cream														
Gelatin	2 t	7		6		24								
Milk cold	¼ c	60	3	2	2 5	43	0 0?0	0 055	0 1	115	31	131	0 05	
Milk scalded	1¼ c	31?	15 5	10 5	1 5	218	0 368	0 290	0 6	599	163	630	0 ?9	
Eggs	2	100		14	10	146	0 054	0 2?4	3	1000	150	250	0 06	
Sugar	¼ c	60	60			240								
Salt	⅛ t													
Vanilla	½ t													

TABLE 18—*Concluded*

Foods	Household Measure	Grams: Amount	Grams: Carbohydrate	Grams: Protein	Grams: Fat	Calories	Grams: Calcium	Grams: Phosphorus	Milligrams: Iron	I U: Vitamin A	Micrograms: Thiamine	Micrograms: Riboflavin	Milligrams: Niacin	Milligrams: Ascorbic Acid
Gelatin Desserts—Continued														
5 servings			*78 5*	*32 5*	*25*	*660*	*0 492*	*0 569*	3 7	*1714*	344	1061	0 40	4 5
1 serving	3 hp T		13	6 5	5	1?6	0 098	0 113	0 7	343	69	212	0 08	0 9
Frozen Desserts														
Orange Ice														
Orange juice	1 c	200	6	1		108	0 048	0 036	0 8	450	2?0	100	0 44	108
Lemon juice	2 T	25	2			8	0 005	0 003	0 1		7		0 02	11
Sugar	1 c	240	240			960								
Water	1½ c													
Orange rind gr	2													
Orange coloring if desired														
5 servings			*268*	*1*		*10 8*	*0 053*	*0 039*	0 9	*450*	227	100	*0 46*	119
1 serving	4 hp T		53 6	0 2		213	0 010	0 007	0 2	90	45	20	0 09	24
Orange Milk Sherbet														
Orange juice	1 c	200	26	1		108	0 048	0 036	0 8	450	2?0	100	0 44	108
Lemon juice	2 T	25	2			8	0 005	0 003	0 1		7		0 02	11
Sugar	1 c	240	240			960								
Milk	1½ c	360	18	12	14	249	0 424	0 334	0 8	69	188	734	0 33	4
Orange rind gr	2													
Orange coloring if desired														
5 servings			286	13	14	13 5	0 477	0 373	1 7	114	415	834	0 79	223
1 serving	*4 hp T*		*57 2*	*2 6*	*2 8*	*265*	*0 095*	*0 074*	*0 3*	2?8	*83*	*173*	*0 16*	44
Chocolate Mousse														
Gelatin	½ T	5		4 5		18								
Milk cold	¼ c	60	3	2	2 5	43	0 070	0 055	0 1	115	31	131	0 05	
Milk scalded	½ c	1 0	6	4	5	85	0 141	0 111	0 3	231	63	6	0 11	
Chocolate	1½ oz	45	13 5	6	2	274	0 040	0 04	1		35			
Sugar	¾ c	160	160			640								
Heavy cream	*2 c*	*450*	*16*	*19*	*184*	*1784*	*0 384*	*0 304*	*0 8*	*10808*	*144*	*87*		
Vanilla	2 t													
10 servings			198 5	32 5	213 5	2844	0 635	0 6 4	2 4	11154	2?3	1065	0 16	
1 serving	3 hp T		19 8	3 2	21 3	84	0 063	0 067	0 2	1115	7	106	0 01	
White Sauce														
Thin White Sauce for cream toast and cream soup														
Butter	1 T	15			12	108	0 00	0 00		405				
Flour	1 T	7	5	0 5			0 001	0 007	0 1		26	18	0 09	
Milk	1 c	240	12	8	9 5	166	0 283	0 223	0 5	451	125	523	0 ??	
Salt	⅛ t													
2 servings			*17*	*8 5*	*21 5*	*296*	*0 286*	*0 23*	*0 6*	*856*	151	*541*	*0 31*	
1 serving	½ c		8 5	4 2	10 7	148	0 143	0 116	0 3	433	75	2?0	0 15	
Medium White Sauce for cream and escalloped dishes														
Butter	2 T	30			24	216	0 004	0 004		810				
Flour	2 T	14	10	1		44	0 00	0 014	0 2		5	35	0 18	
Milk	1 c	240	12	8	9 5	166	0 ?3	0 223	0 5	451	1 5	523	0 ??	
4 servings			2?	9	33 5	4 5	0 289	0 241	0 7	1??1	177	553	0 40	
1 serving	¼ c		5 5	2 2	8 4	105	0 0??	0 060	0 2	315	44	138	0 10	

TABLE 19
CARBOHYDRATE

VEGETABLES AND FRUITS ARRANGED ACCORDING TO THEIR AVERAGE PERCENTAGE COMPOSITION OF CARBOHYDRATE*

Vegetables

5 Per cent		10 Per cent		15 Per cent		20 Per cent		Over 20 Per cent	
Asparagus	8 st	Beans string	½ c	Parsnips	½ c	Beans lima		Beans lima	½ c
Asparagus (C)	7 st	Beets	2 m	Peas	½ c	dried ck	½ c	Potato sweet	1 sm
Beans string (C)	½ c	Brussels sprouts	7 sm			Beans navy			
Beet greens	½ c	Carrots	1 L			dried ck	½ c		
Cabbage	½ c	Dandelion greens	½ c			Corn	½ c		
Cabbage		Onions	2 m			Peas dried ck	½ c		
Chinese	1 c	Peas (C)	4 T			Potato white	1 sm		
Cauliflower	½ c	Pumpkin	½ c						
Celery	4 st	Rutabaga	½ c						
Chard	½ c	Squash winter	½ c						
Cucumber	1 m	Turnip	½ c						
Eggplant	½ c								
Lettuce	¼ hd								
Pepper	1 L								
Radishes	10								
Sauerkraut	⅔ c								
Spinach	½ c								
Squash summer	½ c								
Tomatoes	1 m								
Tomatoes (C)	½ c								

Fruits

5 Per cent		10 Per cent		15 Per cent		20 Per cent		Over 20 Per cent	
Avocado	½ m	Blackberries	½ c	Apple	1 sm	Peaches (C)	2 H	Applesauce	
Rhubarb	1 c	Cantaloup	¼	Apricots	3 m	Pears (C)	2 H	(C)	½ c
		Cranberries	1 c	Blueberries	½ c	Pineapple (C)	1 sl	Apricots (C)	4 sm H
		Currants	½ c	Cherries	25 sm			Banana	1 m
		Gooseberries	½ c	Grapefruit (C)	8 sections			Dried	
		Grapefruit	½ m	Grapes	20			Apricots	6 H
		Lemon	1 L	Pear	1 m			Currants	2 T
		Orange	1 m	Pineapple	1 sl			Dates	3-4
		Peach	1 m	Plums	3 av			Figs	2 sm
		Strawberries	10 L	Raspberries	¼ c			Peaches	2 H
		Tangerine	2 sm					Prunes	3 m
		Watermelon	½ thin slice					Raisins	2 T

* Following the Joslin nomenclature

TABLE 20

AVAILABLE CARBOHYDRATE IN VEGETABLES AND FRUITS

(Figures taken from *The Carbohydrate Content of Foods*, by R A McCance and R D Lawrence Med Res Council, Special Report Series 135 H M Stationery Office, 1929 London England)

Grams	Food	Household Measure	Grams
	Vegetables		
100	Asparagus	8 st , 4 inches long	1 5
100	Beans, butter or lima	½ c or 4 r T	16 0
100	Beans, French or string	½ c or 4 r T	1 3
100	Beans, Haricot or navy	½ c or 3 r T	16 7
100	Beets	2 sm	8 0
100	Brussels sprouts	9 m	2 7
100	Cabbage	5 r T , ck	1 0
100	Carrots	1 L	5 9
100	Cauliflower	6 r T	1 3
100	Celery	4 st raw	1 0
100	Celery	6 r T , ck	0 5
100	Cucumber	½ m or 10 sl	1 7ɔ
100	Endive	2 m st	2 6
100	Lettuce	⅓ head or 10 leaves	0 7
100	Kale	1 s	0 5
100	Onions	2 m	5 4
100	Parsnips	1 L	9 5
100	Peas	4 T	12 8
100	Potatoes	1 sm , old	19 2
100	Pumpkin	½ c , cu , raw	2 5
100	Radishes	15–20 m	1 6
100	Spinach	4 r T	1 3
100	Tomatoes	1 m	2 4
100	Turnips	4 r T cu	3 ɔ

AVAILABLE CARBOHYDRATE OF FRUITS

(Edible Portion)

(Figures taken from *Available Carbohydrate of Fruits* by E M Widdowson and R A McCance The Biochemical Journal Vol XXIX p 151 193ɔ, University Press Cambridge England)

Grams	Food	Household Measure	Grams
100	Apples Empire eating	1 sm	12 17
100	Apricots	3 m	6 6ɔ
100	Banana	1 m	19 20
100	Blackberries	¾ c	6 36
100	Cherries	2ɔ sm	11 94
100	Cranberries	¾ c	3 54
100	Grapefruit	½ m	5 33
100	Grapes white	24 av	16 13
100	Oranges	1 m	8 51
100	Orange juice	½ c sc	9 44
100	Peaches	1 m	9 06
100	Pineapple	1 sl , ¾ inch thick	11 63
100	Plums	3–4 m	9 60
100	Raspberries	4 r T	5 61
100	Strawberries	10 L	6 21

TABLE 21

CARBOHYDRATE EQUIVALENTS

Approximately 10 grams Various fruits equivalent to 1 orange

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
Apple	½ m	75	10 5	0 5	0 5
Apricots (C)	2 H	40	10 0		
Apricots, dried	3 H	15	10 0	1 0	
Apricots, fresh	2 L	70	10 0		
Banana	½ m	50	11 5	0 5	
Blackberries	½ c	100	12 0	1 0	1 0
Blueberries	7 T	67	10 0	0 5	0 5
Cantaloup	¼ melon	100	9 5	0 5	
Cherries, sweet	17 sm	67	10 0	0 5	0 5
Cranberries	1 c	100	11 5	0 5	0 5
Currants	½ c	100	12 5	1 5	0 5
Currants dried	1 T	15	10 5	0 5	
Dates	2	15	11 0		0 5
Figs, dried	1 sm	15	11 0	0 5	
Gooseberries	⅔ c	100	10 0	1 0	0 5
Grapefruit	½ m	100	10 0	0 5	
Grapefruit (C)	6 sections	70	10 0	0 5	
Grapes	13	67	10 0	0 5	0 5
Lemon	1¼ L	125	10 5	1 0	0 5
Orange	1 m	100	11 0	1 0	
Orange juice	½ c sc	100	12 5	0 5	
Peach	1 m	100	12 0	0 5	
Peach (C)	1 H , ½ T J	50	9 0		
Peach, dried	1 H	15	10 5	0 5	
Pear	⅔ m	67	10 5	0 5	0 5
Pear (C)	1 H ½ T J	50	9 0		
Pineapple	¾ sl ¾ in	75	10 5	0 5	
Pineapple (C)	½ sl , ½ T J	50	10 5		
Plums	2 L	80	10 5		
Prunes	1 L or 2 sm	15	10 5		
Raisins	1 T	15	11 0	0 5	0 5
Raspberries, red	½ c	70	10 0	0 5	0 5
Rhubarb	2½ c	250	10 0	1 0	
Strawberries	13 L	130	10 5	0 5	0 5
Tangerine	2 sm	100	11 0	1 0	0 5
Watermelon	1 thin sl	150	10 5	0 5	

Other food constituents as well as carbohydrate should be considered in using these equivalents

TABLE 22
CARBOHYDRATE EQUIVALENTS

Approximately 10 grams   Various foods equivalent to 2 teaspoons of sugar

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
Beans baked (C)	2 T	50	10	3 5	1
Biscuit	1 b 2¼″ d	—	12 5	2	4
Bread	¾ or 1 thin sl	20	10	2	0 5
Cake, angel	1″ arc 4½ × 3″	—	12	1	
Cake plain	1″ cu	—	13	1	2
Cake, sponge	1″ arc 4½ × 3″	—	10	0 5	1
Cake white	½ 2 cu	—	11	1	1 5
Cookies oatmeal	¾ thin 2¼″ d	—	10	2	1
Cookies sugar	2 thin 2¼″ d	—	10	1	2
Cornflakes	¾ c	15	12 5	1	
Cornstarch	1 T	10	9		
Corn syrup	2 t	10	9		
Crackers	2 Uneedas	12	9	1	1
	3 saltines	12	9	1 5	1 5
	1½ graham	15	11	1 5	1 5
Flour	2 T	14	10	1	
Fruit					
5 per cent	2 s	200	10	1	
10 per cent	1 s	100	10	1	
15 per cent	1 very sm s	75	10 5	0 5	
Over 15 per cent					
Banana	½ m	50	11 5	0 5	
Figs dried	1 sm	15	11	0 5	
Prunes	2 sm or 1 L	15	10 5		
Raisins	1 T	15	11	0 5	0 5
Gingerbread	¼ 2 sq	—	11	1	2
Ice orange	1 T	—	10 5		
Jam or jelly	2 t	14	10		
Jello lemon	½ s	33	10 5	1	
Macaroni ck	6 T	75	11	2	
Molasses	1 sc T	15	10 5		
Muffin cornmeal	½ muffin 2¾″ d	—	9 5	1 5	3
Muffin plain	½ muffin 2¾″ d	—	9 5	1 5	3
Oats rolled ck	6 T	90	9	2 5	1
Pudding bread	2 T	—	12 5	2 5	3 5
Pudding cornstarch	2 T	—	13	1 5	1 5
Pudding tapioca	2 t	—	9	2	2
Ry Krisp	2	14	10	2	
Sherbet orange, milk	1½ T	—	11	0 5	0 5
Shredded wheat	½ b	15	12	2	
Sugar	2 t or 2 lumps	10	10		
Tapioca	1 sc T	12	10		
Vegetables					
5 per cent	2½ s	250	10	3 5	
10 per cent	1 s	100	8 5	2	
15 per cent	5 T peas	63	11	4	
Over 20 per cent					
Corn	½ m ear	50	10	1 5	0 5
Corn	2 T (C)	50	9 5	1 5	0 5
Potato	½ sm	50	9 5	1	

Other food constituents as well as carbohydrate should be considered in using equivalents

TABLE 23

CARBOHYDRATE EQUIVALENTS

Approximately 15 grams Various fruits equivalent to 1 small apple

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
Apricots	3 m	100	13		
Apricots (C)	2 H ½ T J	60	15		
Apricots, dried	4½ H	23	15	1	
Banana	¾ m	75	17	0 5	
Blackberries	10 T	125	15	1	1
Blueberries	⅔ c	100	15	0 5	0 5
Cantaloup	⅓ melon	133	19	0 5	
Cherries, sweet	25 sm	100	15	1	0 5
Cranberries	1¼ c	125	14 5	0 5	0 5
Currants	¾ c	125	15 5	2	0 5
Currants, dried	4 t	20	14 5	0 5	
Dates	2½	20	14		0 5
Figs	1½ sm	20	15 5	0 5	
Gooseberries	1 c	150	15	1 5	0 5
Grapefruit	¾ m	150	15	0 5	
Grapefruit (C)	8 sections	100	14	0 5	
Grapefruit juice (C)	¾ c sc	150	15	0 5	
Grapes	20	100	15	1	1
Lemons	2 L	200	17	2	1
Oranges	1½ m	150	16 5	1 5	
Orange juice	½ c	100	14	0 5	
Peach	1¼ m	125	15	0 5	
Peaches (C)	2 sm H , 1 T J	85	15	0 5	
Peaches, dried	2 sm H	23	18	1	
Pear	1 m	100	16	0 5	0 5
Pear (C)	2 sm H , 1 T J	85	15	0 5	
Pineapple	1 sl ¾″	100	14	0 5	
Pineapple (C)	¾ sl , 1 T J	75	15 5	0 5	
Pineapple juice (C)	½ c sc	100	13	0 5	0 5
Plums	3 av	100	13	0 5	
Prunes	2 m	20	14	0 5	
Raisins	1½ T	20	14 5	0 5	0 5
Raspberries, red	¾ c	100	14 5	1	0 5
Strawberries	20 L	200	16	1	1
Tangerine	3 sm	150	16 5	1 5	0 5
Watermelon	2 thin sl	200	14	1	

Other food constituents as well as carbohydrate should be considered in using these equivalents

TABLE 24

CARBOHYDRATE EQUIVALENTS

Approximately 15 grams Various foods equivalent to 1 slice of bread or 1 very small potato

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
Beans baked (C)	2 r T	75	13	4 5	1 5
Biscuit	1¼ b 2" d	—	15 5	2 5	5
Bread	1 sl	30	15	3	0 5
Cake angel	1" arc 4½ x 3	—	14 5	1 5	
Cake plain	1" cu	—	15 5	1	2 5
Cake sponge	1⅓ arc 4½ x 3	—	16	2 5	1 5
Cake white	⅜ 2" cu	—	13 5	1	2
Cookies oatmeal	1 thin 2¼" d	—	13 5	2 5	1 5
Cookies sugar	3 thin 2¼" d	—	15	1 5	3
Cornstarch	1⅓ T	15	13 5		
Corn syrup	1 T	15	13		
Crackers	3½ Uneedas	21	16	1 5	1 5
	2 graham	20	15	2	2
	5 saltines	20	15	2 5	2 5
Flour white	3 T sifted	21	15	1 5	
Fruit					
5 per cent	3 s	300	15	1 5	
10 per cent	2 sm s or 1 L	150	15	1 5	
15 per cent	1 sv	100	14	0 5	
20 per cent	⅘ sv	80	15	0 5	
Gingerbread	⅓ 2" cu	—	15	1 5	2 5
Ice orange	1 hp T	—	13 5		
Jam or jelly	1 T	20	15		
Jello lemon	½ s	50	15 5	1	
Macaroni, ck	½ c	100	14 5	3	
Muffin, cornmeal	¾ muffin 2¾ d	—	14	2	4
Muffin plain	¾ muffin 2¾" d	—	14	2	4
Molasses	1⅓ T sc	23	15 5	0 5	
Oats rolled ck	1 sm s	145	15	4	1 5
Pudding bread	2 hp T	—	16 5	3	5
Pudding cornstarch	2 r T	—	17	2	2
Pudding tapioca	1 T	—	13 5	3	3
Ry Krisp	3 crackers	21	15	3	
Sherbet orange milk	1 hp T	—	14	0 5	0 5
Shredded wheat	⅚ biscuit	20	16	2	
Sugar	3 t or 3 lumps	15	15		
Tapioca	1 T	15	13		
Vegetables					
5 per cent	4 s	400	16	6	
10 per cent	2 s	200	17	4	
Corn (C)	3 r T	80	15	2 5	1
Corn fresh	1 sm ear	75	15	2 5	1

Other food constituents as well as carbohydrate should be considered in using these equivalents

TABLE 23
CARBOHYDRATE EQUIVALENTS
Approximately 15 grams Various fruits equivalent to 1 small apple

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
Apricots	3 m	100	13		
Apricots (C)	2 H, ½ T J	60	15		
Apricots, dried	4½ H	23	15	1	
Banana	¾ m	75	17	0 5	
Blackberries	10 T	125	15	1	1
Blueberries	⅔ c	100	15	0 5	0 5
Cantaloup	½ melon	133	19	0 5	
Cherries, sweet	25 sm	100	15	1	0 5
Cranberries	1¼ c	125	14 5	0 5	0 5
Currants	¾ c	125	15 5	2	0 5
Currants, dried	4 t	20	14 5	0 5	
Dates	2½	20	14		0 5
Figs	1½ sm	20	15 5	0 5	
Gooseberries	1 c	150	15	1 5	0 5
Grapefruit	⅔ m	150	15	0 5	
Grapefruit (C)	8 sections	100	14	0 5	
Grapefruit juice (C)	⅔ c sc	150	15	0 5	
Grapes	20	100	15	1	1
Lemons	2 L	200	17	2	1
Oranges	1½ m	150	16 5	1 5	
Orange juice	½ c	100	14	0 5	
Peach	1¼ m	125	15	0 5	
Peaches (C)	2 sm H, 1 T, J	85	15	0 5	
Peaches, dried	2 sm H	23	18	1	
Pear	1 m	100	16	0 5	0 5
Pear (C)	2 sm H, 1 T J	85	15	0 5	
Pineapple	1 sl ¾"	100	14	0 5	
Pineapple (C)	¾ sl, 1 T J	75	15 5	0 5	
Pineapple juice (C)	½ c sc	100	13	0 5	0 5
Plums	3 av	100	13	0 5	
Prunes	2 m	20	14	0 5	
Raisins	1½ T	20	14 5	0 5	0 5
Raspberries, red	¾ c	100	14 5	1	0 5
Strawberries	20 L	200	16	1	1
Tangerine	3 sm	150	16 5	1 5	0 5
Watermelon	2 thin sl	200	14	1	

Other food constituents as well as carbohydrate should be considered in using these equivalents

TABLE 24
CARBOHYDRATE EQUIVALENTS

Approximately 15 grams Various foods equivalent to 1 slice of bread or 1 very small potato

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
Beans baked (C)	2 r T	75	13	4 5	1 5
Biscuit	1½ b 2" d	—	15 5	2 5	5
Bread	1 sl	30	15	3	0 5
Cake angel	1 arc 4½ x 3	—	14 5	1 5	
Cake plain	1" cu	—	15 5	1	2 5
Cake sponge	1½ arc 4½ x 3	—	16	2 5	1 5
Cake white	¾ 2 cu	—	13 5	1	2
Cookies oatmeal	1 thin 2½ d	—	13 5	2 5	1 5
Cookies, sugar	3 thin 2½ d	—	15	1 5	3
Cornstarch	1½ T	15	13 5		
Corn syrup	1 T	15	13		
Crackers	3½ Uneedas	21	16	1 5	1 5
	2 graham	20	15	2	2
	5 saltines	20	15	2 5	2 5
Flour white	3 T sifted	21	16	1 5	
Fruit					
5 per cent	3 s	300	15	1 5	
10 per cent	2 sm s or 1 L	150	15	1 5	
15 per cent	1 sv	100	14	0 5	
20 per cent	⅔ sv	80	15	0 5	
Gingerbread	½ 2 cu	—	15	1 5	2 5
Ice orange	1 hp T	—	13 5		
Jam or jelly	1 T	20	15		
Jello lemon	½ s	50	15 5	1	
Macaroni ck	½ c	100	14 5	3	
Muffin cornmeal	½ muffin 2 ¾ d	—	14	2	4
Muffin plain	½ muffin 2 ¾" d	—	14	2	4
Molasses	1½ T sc	23	15 5	0 5	
Oats rolled ck	1 sm s	145	15	4	1 5
Pudding bread	2 hp T	—	16 5	3	5
Pudding, cornstarch	2 r T	—	17	2	2
Pudding tapioca	1 T	—	13 5	3	3
Ry Krisp	3 crackers	21	15	3	
Sherbet orange milk	1 hp T	—	14	0 5	0 5
Shredded wheat	¾ biscuit	20	16	2	
Sugar	3 t or 3 lumps	15	15		
Tapioca	1 T	15	13		
Vegetables					
5 per cent	4 s	400	16	6	
10 per cent	2 s	200	17	4	
Corn (C)	3 r T	80	15	2 5	1
Corn fresh	1 sm ear	75	15	2 5	1

Other food constituents as well as carbohydrate should be considered in using these equivalents

TABLE 25

PROTEIN EQUIVALENTS

Approximately 7 grams Various foods equivalent to 1 egg

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
°Almonds	24–30 nuts	30	5	6 5	16 5
Bacon	10 sl full length	60		6	39
°Beans, baked (C)	3 r T	100	19 5	7	2 5
°Beans, lima, dry	3 T	45	30	8	0 5
Beans, lima, fresh	½ c	100	23 5	7 5	1
°Beans, navy, dry	2 T	30	18	7	0 5
Beans, soy, dry	1½ T	23	2 5	7 5	4
°Bread	2½ sl	75	37 5	7 5	1
Cereal, oats dry	6 T (1¼ c ck)	45	27	7 5	3
Cheese, American	1 oz or 2 T	30	1	7	10
Cheese, cottage, skim	2 T	30	1	6	
Cheese, cream	3 T	45		7 5	19 5
°Crackers, Uneedas	14	84	63	7	7
Crackers graham	7	70	52 5	7	7
Cream, light	1 c	240	12	8	48
Egg	1	50		7	5
Fish av	1½ oz	45		8	2
°Gelatin	¾ T	7		6 5	
Liver, beef	1 oz	30	0 5	6	1 5
Liver, calves	1 oz	30	1	5 5	1 5
Meat, lean	1 oz	30		6 5	2 5
Meat, med fat	1½ oz	45		7 5	9 5
Poultry, dark	1 oz	30		6 5	1 5
Poultry light	1 oz	30		7	1
Milk	1 c	240	12	8	9 5
°Peanut butter	1½ T	23	3 5	6 5	10 5
°Peanuts, shelled	33–35 nuts	30	7	8	11 5
Peas, dried	2 T	30	18 5	7 5	0 5
°Potato	2 L or 3 sm	300	57	6	
Vegetables–5 per cent	5 s	500	20	7 5	
Vegetables–10 per cent	3 s	300	25 5	6	

Other food constituents as well as protein should be considered in using these equivalents

° Incomplete protein

TABLE 26

SOME COMMON FOODS ARRANGED ACCORDING TO THEIR CONTENT OF FAT IN TERMS OF AVERAGE SERVINGS†

4 Grams or More	3.9 to 3 Grams	2.9 to 2 Grams	1.9 to 1 Gram	Less than 1	Fat Free
		Bread, Cereals and Crackers			
		Oats, rolled	Graham cracker Noodles Rice, white	Bread Ralston Rice, brown	
		Dairy Products			
+Butter Cheese American Cream Cream, heavy Egg yolk	*Cream, light		**Milk Milk, skim	Buttermilk Cheese, cottage	Egg white
		Fruits			
Avocado			Blackberries Dates Grapes Raisins		
		Meat, Fish and Poultry			
**Bacon Halibut Liver Mackerel Meat and poultry Lean **Medium fat Salmon Shad		Meat **Lean	**Liver Oysters **Poultry Smelts	Flounder	Cod Haddock
		Miscellaneous			
Cake Plain White Doughnut Gingerbread Ice Cream Nuts—all kinds Oil Pie	+Mayonnaise	+Chocolate	Cake, sponge	Cake, angel +Cocoa	Corn syrup Gelatin Ginger ale Honey Jello Jelly Maple syrup Marmalade Molasses Sugar Tapioca
		Vegetables			
**Beans, soy, dried	++Olive, green	Beans, baked (C)	Beans, lima Corn		

Average Servings

Bread	30 grams	Milk	240 grams
Cereals, dry	30 grams	Meat, fish or poultry	90 grams
Cheese	30 grams	Nuts	30 grams
Fruits, fresh	100 grams	Vegetables, fresh	100 grams
Fruits, dried	30 grams	Vegetables, dried (legumes)	30 grams

† Cf. Table of Food Values and Measures (Table 15) for amounts of average servings.
Other Servings: * 15 gram serving, ** 30 gram serving, + 5 gram serving, ++ 10 gram serving.

TABLE 27
FAT EQUIVALENTS

Approximately 4 grams Various foods equivalent to 1 teaspoon of butter

Food	Household Measure	Grams			
		Amount	Carbohydrate	Protein	Fat
Bacon	1 sl full length	6		0 5	4
Butter	1 t	5			4
Cheese, American	½ oz or 1 T	15	0 5	3 5	5
Cheese, cream	2 t	10		1	4
Cream, heavy	1 T	15	0 5	0 5	5 5
Cream, light	1½ T	22	0 5		4 5
Egg	1	50		7	5
French dressing	½ T	8	0 5		4
Ice cream, commercial	2½ T	30	6	1	4
Liver, beef	3 oz	90	1 5	18 5	4
Mayonnaise	1 t	5			3 5
Meat lean	2 oz	60		13	5
Meat med fat	¾ oz	23		3 5	5
Poultry, dark	3 oz	90		19 5	4 5
Poultry light	4 oz	120		28	4
Milk whole	½ c	120	6	4	5
Oil	1 t	5			5
Olives, green	1½ m	15	1 5		4 5
Olives ripe	3 sm	15	0 5		3 5
Peanut butter	2 t	10	2	3	4 5
Peanuts shelled	16-18 nuts	10	2 5	2 5	4
Walnuts shelled	4-8 H	8	1	1 5	5

Other food constituents as well as fat should be considered in using these equivalents

TABLE 28
CALCIUM
Average Servings of Vegetables and Fruits Arranged According to Their Contents of Calcium*

Vegetables

Above 0 050 gram		0 050 to 0 041 gram		0 040 to 0 031 gram		0 030 to 0 021 gram		0 020 to 0 004 gram	
Beans string	0 065	Beans navy	0 044	Beans string (C)	0 037	Asparagus	0 021	Asparagus (C)	0 016
Beet greens	0 094	Cabbage	0 046	Onions	0 038	Beans lima dried	0 022	Corn	0 006
Broccoli	0 140	Carrots	0 045	Radishes	0 037	Beans lima	0 0[illegible]8	Corn (C)	0 007
Celery	0 072			Sauerkraut	0 039	Beets	0 024	Cucumber	0 006
Chard	0 100					Brussels sprouts	0 027	Eggplant	0 011
Dandelion greens	0 084					Cauliflower	0 025	Lettuce head	0 017
Endive	0 104					Peas dried	0 023	Mushroom	0 014
Lettuce leaf	0 069					Peas fresh	0 023	Peas (C)	0 014
Parsnips	0 060					Potato sweet	0 030	Pepper	0 012
						Pumpkin	0 023	Potato white	0 011
								Squash summer	0 018
								Squash winter	0 019
								Tomato	0 007

Fruits

Above 0.050 gram		0 050 to 0.041 gram		0 040 to 0 031 gram		0 030 to 0 021 gram		0 0[illegible]0 to 0 004 gram	
		Figs	048	Gooseberries	0 035	Apricots dried	0 0[illegible]0	Apples	0 007
						Blueberries	0 0[illegible]5	Applesauce (C)	0 005
						Currants	0 0[illegible]6	Apricots (C)	0 009
						Grapefruit	0 021	Banana	0 008
						Lemon	0 0[illegible]	Blackberries	0 017
						Orange	0 0[illegible]4	Cantaloup	0 016
						Raspberries	0 0[illegible]4	Cherries	0 017
						Strawberries	0 0[illegible]3	Cranberries	0 013
								Dates	0 022
								Peaches	0 010
								Peaches (C)	0 009
								Peaches dried	0 018
								Pears	0 015
								Pears (C)	0 009
								Pineapple	0 016
								Pineapple (C)	0 015
								Prunes	0 019
								Raisins	0 018
								Rhubarb	0 004
								Watermelon	0 007

* Cf Table of Food Values and Measures (Table 15) for amounts of average servings

TABLE 29

CALCIUM EQUIVALENTS

Approximately 0 036 gram   Various foods equivalent to 2 tablespoons of milk or ⅛ cup

Grams	Food	Household Measure	Grams	Food	Household Measure
	Bread and Cereals			*Meat*	
60	Bread, wh wheat	2 sl	360	Liver, beef	12 oz
150	Bread, rye light	5 sl	270	Meat, lean	9 oz
60	Bread, white	2 sl	360	Meat, med fat	12 oz
60	Oats, rolled, dry	½ c (1½ c	180	Poultry, dark	6 oz
		ck)	270	Poultry light	9 oz
75	Shredded wheat	2½ b			
				Miscellaneous	
	Dairy Products		15	Almonds	12-15 nuts
4	Cheese, American	⅔ t	30	Maple syrup	1 r T
45	Cheese, cottage	3 T	15	Molasses	1 T sc
10	Cheese, cream	2 t	60	Peanuts	66-70 nuts
45	Cream, heavy	3 T	45	Walnuts	24-48 nuts
38	Cream, light	2½ T			
75	Egg	1½		*Vegetables*	
15	Milk, evaporated	1 T	150	Asparagus	12 st
30	Milk, skim	2 T	45	Beans, lima dried	3 T
30	Milk, whole	2 T	50	Beans, string	½ c
			75	Cabbage	½ c
	Fish		65	Carrots	¾ L
210	Haddock	7 oz	150	Cauliflower	¾ c
90	Herring smoked	½ fish	50	Celery	2 st
360	Mackerel	12 oz	38	Chard	3 T
60	Oysters	4 m	38	Dandelion greens	3 T
60	Salmon (C)	½ c	38	Endive	¾ st
270	Salmon fresh	9 oz	200	Lettuce	½ hd
180	Shad	6 oz	100	Onions	2 m
			50	Parsnips	½ c
	Fruits		100	Potato, sweet	1 sm
45	Apricots, dried	9 H	300	Potato white	3 sm
150	Blueberries	1 c	50	Rutabaga	½ c
45	Currants, dried	3 T	75	Turnips	6 T
45	Dates	5-6	25	Watercress	½ bu
23	Figs	1½ sm			
100	Gooseberries	⅔ c			
200	Grapes	40			
150	Grapefruit	⅔ m			
150	Lemon	1½ L			
150	Orange	1½ m			
150	Orange juice	⅔ c sc			
300	Peach	3 m			
250	Pears	2½ m			
165	Plums	5 av			
60	Prunes	6 m			
150	Raspberries	1 c			
900	Rhubarb	9 c			
150	Strawberries	15 L			

TABLE 30

CALCIUM

VARIOUS COMBINATIONS OF FOODS SUPPLYING A DAY'S REQUIREMENT

Daily Requirement Adult—0 8 gram Children (under 12)—1 gram

Adult

Grams	Food	Household Measure	Calcium Grams
7 0	Milk	3 cups	0 840
	Total Calcium		0 849
	Total Phosphorus		0 669
	Total Iron		0 0015
480	Milk	2 cups	0 566
100	Beans string	1 s d	0 065
120	Bread white enriched	4 sl	0 080
100	Carrots	1 s d	0 045
100	Orange	1 m	0 0 4
200	Potato	1 L	0 022
	Total Calcium		0 802
	Total Phosphorus		0 783
	Total Iron		0 00/2
240	Milk	1 cup	0 83
200	Apple	1 L	0 014
100	Broccoli	1 s	0 140
240	Bread white enriched	6 sl	0 120
100	Carrots	1 s d	0 045
100	Eggs	2	0 054
30	Molasses	2 T sc	0 077
180	Oats rolled ck	1 s d	0 016
100	Orange	1 m	0 0 4
200	Potato	1 L	0 02*
100	Tomato	1 m	0 007
	Total Calcium		0 802
	Total Phosphorus		1 048
	Total Iron		0 0016
240	Milk	1 cup	0 283
100	Banana	1 sm	0 008
150	Bread whole wheat	5 sl	0 075
100	Broccoli	1 s d	0 140
100	Eggs	2	0 054
100	Lettuce	¼ hd	0 017
1*0	Meat med fat	4 oz	0 012
30	Molasses	2 T sc	0 077
200	Oranges	2 m	0 043
400	Potato	2 L	0 044
30	Raisins	2 T	0 018
60	Shredded wheat	2 b	0 0 8
	Total Calcium		0 804
	Total Phosphorus		1 561
	Total Iron		0 0 35

Child

Grams	Food	Household Measure	Calcium Grams
960	Milk	4 cups	1 13
	Total Calcium		1 132
	Total Phosphorus		0 892
	Total Iron		0 002
720	Milk	3 cups	0 849
100	Broccoli	1 s	0 140
100	Potato	1 sm	0 011
	Total Calcium		1 000
	Total Phosphorus		0 794
	Total Iron		0 004
480	Milk	2 cups	0 566
100	Beans string	1 s d	0 065
90	Bread whole wheat	3 sl	0 045
100	Broccoli	1 s	0 140
100	Eggs	2	0 0 7
30	Molasses	2 T sc	0 077
180	Oats rolled ck	1 s d	0 016
00	Oranges	2 m	0 043
100	Potato	1 sm	0 011
100	Tomato	1 m	0 00
	Total Calcium		1 00
	Total Phosphorus		1 054
	Total Iron		0 0141
240	Milk	1 cup	0 283
200	Apple	1 L	0 014
100	Beans string	1 s d	0 065
180	Bread whole wheat	6 sl	0 090
100	Broccoli	1 s	0 140
100	Carrots	1 s d	0 045
100	Eggs	2	0 054
100	Kale	½ c	0 131
60	Meat med fat	2 oz	0 006
30	Molasses	2 T sc	0 077
200	Oranges	2 m	0 043
	Total Calcium		1 003
	Total Phosphorus		1 106
	Total Iron		0 0133

If only this amount of milk were used (and no cheese) it would be impossible for the child to eat the following amounts of foods (to obtain his requirements)

TABLE 31
PHOSPHORUS
Average Servings of Vegetables and Fruits Arranged According to Their Content of Phosphorus*

Vegetables

Above 050 gram		050 to 041 gram		040 to 031 gram		030 to 021 gram		020 to 011 gram		Less Than 010 gram	
Beans lima dried	0 116	Beans string	0 044	Asparagus	0 040	Asparagus (C)	0 029	Cucumber	0 018	Sauerkraut	0 009
Beans navy	0 139	Beets	0 041	Beans string (C)	0 038	Pepper green	0 028	Squash summer	0 015		
Broccoli	0 068	Cabbage Chinese	0 044	Beet greens	0 040	Squash winter	0 [illegible]8				
Brussels sprouts	0 121	Carrots	0 041	Cabbage	0 034	Tomato	0 021				
Cauliflower	0 064	Celery	0 046	Dandelion greens	0 035						
Corn	0 103	Chard	0 050	Eggplant	0 031						
Corn (C)	0 100	Lettuce	0 040	Endive	0 039						
Parsnip	0 076	Onions	0 044	Radishes	0 031						
Peas	0 127	Pumpkin	0 046	Turnip	0 032						
Peas (C)	0 070	Spinach	0 046								
Peas dried	0 123	Watercress	0 046								
Potato sweet	0 052										
Potato white	0 057										
Rutabaga	0 056										

Fruits

Above 050 gram		050 to 041 gram		040 to 031 gram		030 to 021 gram		020 to 011 gram		Less Than 010 gram	
		Currants dried	0 041	Apricots dried	0 036	Apricots	0 024	Apple	0 012	Applesauce (C)	0 009
				Currants	0 038	Cherries	0 022	Blackberries	0 019	Pineapple (C)	0 009
				Figs	0 035	Grapefruit	0 0 [illegible] 0	Blueberries	0 020		
				Gooseberries	0 031	Grapes	0 021	Cantaloup	0 018		
				Peaches dried	0 036	Plums	0 027	Cranberries	0 011		
				Raisins	0 030	Prunes	0 024	Dates	0 018		
						Strawberries	0 023	Grapefruit (C)	0 020		
						Raspberries	0 027	Grapefruit juice (C)	0 020		
								Lemon	0 011		
								Orange	0 018		
								Peach	0 019		
								Peaches (C)	0 013		
								Pear	0 018		
								Pears (C)	0 018		
								P neapple	0 011		
								Rhubarb	0 018		
								Watermelon	0 013		

* Cf Table of Food Values and M asures (Tabl 15) for amounts of average se v ng

TABLE 32
PHOSPHORUS EQUIVALENTS

Approximately 0 056 gram Various foods equivalent to 4 tablespoons of milk

Grams	Food	Household Measure
	Bread and Cereals	
38	Bread wh wheat	1¼ sl
38	Bread, rye, light	1¼ sl
60	Bread, white	2 sl
12	Oats rolled, dry	1⅓ T
15	Ralston dry	1 T (⅓ c ck)
10	Wheat, Cream of, dry	1 T (¼ c ck)
15	Wheat shredded	½ b
	Dairy Products	
8	Cheese American	½ T
20	Cheese cottage	4 t
90	Cream heavy	6 T
75	Cream light	5 T
25	Egg whole	½
9	Egg yolk	½
30	Milk, evaporated	2 T
60	Milk skim	4 T
60	Milk whole	4 T
	Fish	
15	Cod	½ oz
38	Flounder	1¼ oz
30	Haddock	1 oz
45	Oysters	3 m
23	Salmon fresh	¾ oz
30	Shad	1 oz
	Fruits	
200	Banana	2 m
300	Blackberries	3 s d
250	Cherries	63
45	Currants	3 T
45	Figs dried	3 sm
2,0	Grapes	50
45	Peaches dried	3 H
500	Pineapple	5 sl ¾" thick
70	Prunes	7 m
60	Raisins	4 T
200	Raspberries red	1½ c
2,0	Strawberries	25 L

Grams	Food	Household Measure
	Meats	
48	Bacon	8 sl full length
15	Liver, beef or calves	½ oz
30	Meat lean	1 oz , sc
30	Meat med fat	1 oz
23	Poultry, dark or light	¾ oz
	Nuts	
12	Almonds	10–12 nuts
300	Peanut butter	10 T
15	Pecans	12 H
15	Walnuts	8–16 nuts
	Vegetables	
15	Beans lima dried	1 T
40	Beans lima fresh	3 T
12	Beans navy	1 T
125	Beans string	½ s d
50	Brussels sprouts	3 sm
125	Carrots	1½ L
100	Cauliflower	½ c
50	Corn	½ m ear or 4 T
150	Dandelion greens	¾ c
60	Mushrooms	6 m
66	Parsnips	⅓ c
50	Peas	½ c
50	Peas dried	1 T
100	Potato sweet	1 sm
100	Potato white	1 sm
125	Pumpkin	¾ c
125	Spinach	¾ c
200	Turnips	1 c

TABLE 33
PHOSPHORUS

VARIOUS COMBINATIONS OF FOODS SUPPLYING A DAY'S REQUIREMENT

Daily Requirement Adult—1 32 grams Child (9 years)—1 5 grams

Adult

Grams	Food	Household Measure	Phosphorus Grams
150	Bread whole wheat	5 sl	0 225
100	Eggs	2	0 224
120	Meat med fat	4 oz	0 200
480	Milk	2 c	0 446
180	Oats rolled ck	1 s d	0 126
200	Potato	1 L	0 114
Total Phosphorus			1 335
Total Calcium			0 745
Total Iron			0 0139
200	Apple	1 L	0 024
100	Beans string	1 s d	0 044
150	Bread whole wheat	5 sl	0 225
100	Carrots	1 s d	0 041
50	Egg	1	0 112
90	Meat med fat	3 oz	0 150
480	Milk	2 c	0 446
100	Orange	1 m	0 018
200	Potato	1 L	0 114
30	Shredded wheat	1 b	0 125
100	Tomato	1 m	0 021
Total Phosphorus			1 320
Total Calcium			0 883
Total Iron			0 015
200	Apple	1 L	0 024
100	Banana	1 sm	0 028
100	Beans string	1 s d	0 044
150	Bread whole wheat	5 sl	0 225
100	Broccoli	1 s	0 068
100	Carrots	1 s d	0 041
50	Egg	1	0 112
100	Lettuce	¼ hd	0 040
90	Meat med fat	3 oz	0 150
480	Milk	2 c	0 446
100	Orange	1 m	0 018
200	Potato	1 L	0 114
100	Tomato	1 m	0 0 1
Total Phosphorus			1 331
Total Calcium			1 019
Total Iron			0 0165
100	Beans string	1 s d	0 044
150	Bread whole wheat	5 sl	0 225
50	Egg	1	0 112
720	Milk	3 c	0 669
180	Oats rolled ck	1 s d	0 126
100	Pineapple	1 sl	0 011
200	Potato	1 L	0 114
100	Tomato	1 m	0 0 1
Total Phosphorus			1 3 2
Toal Calcium			1 077
Total Iron			0 0124

Child

Grams	Food	Household Measure	Phosphorus Grams
120	Bread whole wheat	4 sl	0 180
100	Eggs	2	0 224
960	Milk	4 c	0 89
180	Oats rolled ck	1 s d	0 126
200	Potato	1 L	0 114
Total Phosphorus			1 5[illegible]6
Total Calcium			1 284
Total Iron			0 0115
100	Banana	1 sm	0 0 8
120	Bread whole wheat	4 sl	0 180
100	Carrots	1 s d	0 041
50	Egg	1	0 112
60	Meat med fat	2 oz	0 100
7 0	Milk	3 c	0 669
180	Oats rolled ck	1 s d	0 126
100	Orange	1 m	0 018
100	Peas	1 s d	0 127
200	Potato	1 L	0 114
Total Phosphorus			1 515
Total Calcium			1 080
Total Iron			0 0146
200	Apple	1 L	0 024
100	Banana	1 sm	0 0 5
100	Beans string	1 s d	0 044
150	Bread whole wheat	5 sl	0 225
100	Carrots	1 s d	0 041
50	Egg	1	0 112
60	Meat med fat	2 oz	0 100
720	Milk	3 c	0 669
200	Potato	1 L	0 114
30	Shredded wheat	1 b	0 125
100	Tomato	1 m	0 0 1
Total Phosphorus			1 503
Total Calcium			1 13
Total Iron			0 015
150	Bread whole wheat	5 sl	0 225
100	Carrots	1 s d	0 041
60	Meat med fat	2 oz	0 100
960	Milk	4 c	0 89
100	Orange	1 m	0 018
100	Peas	1 s d	0 127
200	Potato	1 L	0 114
Total Phosphorus			1 517
Total Calcium			1 3 7
Total Iron			0 01[illegible]1

TABLE 31

IRON

Average Servings of Vegetables and Fruits Arranged According to Their Content of Iron

Vegetables

Above 1.5 Milligrams		1.5–1.0 Milligrams		0.9–0.5 Milligram		0.4–0.0 Milligram	
Beans lima dried	2.9	Asparagus	1.0	Asparagus (C)	0.7	Cabbage	0.4
Beans lima, fresh	2.4	Beans string	1.4	Beans string (C)	0.7	Corn (C)	0.4
Beans navy	3.1	Broccoli	1.4	Beets	0.9	Cucumber	0.3
Beet greens	3.2	Brussels sprouts	1.2	Carrots	0.6	Lettuce	0.1
Chard	3.1	Cabbage Chinese	1.0	Cauliflower	0.9	Pepper	0.4
Dandelion greens	3.1	Endive	1.2	Celery	0.6	Sauerkraut	0.3
Peas dried	1.8	Potato sweet	1.0	Corn	0.5	Squash summer	0.4
Peas fresh	2.1	Potato white	1.3	Eggplant	0.8		
Spinach	2.5			Lettuce head	0.5		
Watercress	3.0			Mushrooms	0.7		
				Onions	0.5		
				Pumpkin	0.9		
				Radishes	0.8		
				Rutabaga	0.5		
				Squash winter	0.6		
				Tomato	0.6		
				Turnip	0.5		

Fruits

Above 1.5 Milligrams		1.5–1.0 Milligrams		0.9–0.5 Milligram		0.4–0.0 Milligram	
Apricots dried	2.3	Dates	1.0	Apricots	0.6	Apples	0.4
Peaches dried	1.8			Banana	0.6	Applesauce (C)	0.3
				Blackberries	0.9	Apricots (C)	0.4
				Blueberries	0.9	Grapefruit	0.3
				Cantaloup	0.7	Grapefruit (C)	0.3
				Cherries sweet	0.6	Orange	0.4
				Cranberries	0.6	Peach	0.3
				Currants	0.6	Peach (C)	0.2
				Figs	0.9	Pear	0.3
				Gooseberries	0.5	Pear (C)	0
				Grapes	0.7	Pineapple	0.3
				Lemons	0.6	Pineapple (C)	0.3
				Plums	0.5	Watermelon	0.2
				Prunes	0.9		
				Raisins	0.9		
				Raspberries	0.9		
				Strawberries	0.9		

Cf Tables of Food Values and Measures (Table 15) for amounts of average servings

TABLE 35

IRON EQUIVALENTS

Approximately 1 5 milligrams Various foods equivalent to 1 egg

Grams	Food	Household Measure	Grams	Food	Household Measure
	Bread and Cereals			*Miscellaneous*	
75	Bread, wh wheat	2½ sl	45	Maple syrup	2 T
90	Bread, rye	3 sl	20	Molasses	1 T , sc
150	Bread, white, enr	5 sl			
180	Oats, rolled	¾ c		*Nuts*	
45	Wheat shredded	1½ b	40	Almonds	30–40 nuts
			80	Peanuts	88 nuts
	Dairy Products		60	Pecans	48 H
18	Egg yolk	1	75	Walnuts	40-80 H
50	Egg	1			
720	Milk	3 c		*Vegetables*	
			150	Asparagus	12 st
	Fish		15	Beans lima, dried	1 T
150	Flounder	5 oz	60	Beans, lima, fresh	5 T
90	Herring smoked	½ sm fish	100	Beans string	½ c
30	Oysters	2 m	50	Beet greens	¼ c
120	Salmon (C)	1 c	150	Beets	3 m
150	Salmon, fresh	5 oz	100	Broccoli	½ c
			120	Brussels sprouts	9 m
	Fruits		150	Cauliflower	¾ c
20	Apricots dried	4 H	50	Chard	½ c
150	Blackberries	12 T	50	Dandelion greens	¾ c
150	Blueberries	1 c	150	Lettuce, leaf	15 lvs
200	Currants	1 c	200	Parsnips	1 c
45	Dates	5–6 stoned	66	Peas	½ c
45	Figs	3	30	Peas dried	2 T
30	Peaches dried	2 H	150	Potato, sweet	1½ sm
500	Pears	5 m	100	Potato white	1 sm
60	Prunes	6 m	150	Pumpkin	¾ c
45	Raisins	3 T	60	Spinach	5 T
150	Raspberries red	1 hp c	50	Watercress	½ bunch
	Meat				
90	Bacon	15 strips			
75	Chicken	2½ oz			
20	Liver, beef	⅔ oz			
45	Beef lean	1½ oz			
60	Beef, m fat	2 oz			

TABLE 36
IRON

VARIOUS COMBINATIONS OF FOODS SUPPLYING A DAY'S REQUIREMENTS

Daily Requirement Adult—12 milligrams Child (9 years)—10 milligrams

Adult

Grams	Food	Household Measure	Iron Milligrams
150	Bread whole wheat	5 sl	3 0
50	Egg	1	1 5
480	Milk	2 c	1 0
150	Oats rolled ck	1 s d	1 6
200	Potato	1 L	2 6
100	Spinach	1 s d	3 5
Total Iron			12 1
Total Calcium			784 0
Total Phosphorus			1069 0
200	Apple	1 L	0 8
100	Banana	1 sm	0 6
100	Beans string	1 s d	1 4
170	Bread white enr	4 sl	1 2
100	Carrots	1 s d	0 6
480	Milk	2 c	1 0
30	Molasses	2 T sc	2 8
100	Orange	1 m	0 4
200	Potato	1 L	2 6
100	Tomato	1 m	0 6
Total Iron			12 0
Total Calcium			908 0
Total Phosphorus			865 0
150	Bread, whole wheat	5 sl	3 0
100	Broccoli	1 s	1 4
120	Meat med fat	4 oz	2 8
480	Milk	2 c	1 0
200	Potato	1 L	2 6
30	Prunes	3 m	0 9
30	Shredded wheat	1 b	1 0
Total Iron			12 7
Total Calcium			847 0
Total Phosphorus			1202 0
100	Eggs	2	3 0
120	Meat lean	4 oz	3 6
480	Milk	2 c	1 0
180	Oats rolled ck	1 s d	1 5
100	Peas	1 s d	2 1
30	Raisins	2 T	0 9
Total Iron			12 1
Total Calcium			693 0
Total Phosphorus			1197 0

Child

Grams	Food	Household Measure	Iron Milligrams
30	Bread whole wheat	1 sl	0 6
50	Egg	1	1 5
720	Milk	3 c	1 5
180	Oats rolled ck	1 s d	1 5
200	Potato	1 L	2 6
100	Spinach	1 s d	2 5
Total Iron			10 2
Total Calcium			1007 0
Total Phosphorus			1112 0
200	Apple	1 L	0 8
100	Banana	1 sm	0 6
100	Beans string	1 s d	1 4
100	Carrots	1 s d	0 6
480	Milk	2 c	1 0
30	Molasses	2 T sc	2 8
100	Orange	1 m	0 4
200	Potato	1 L	2 6
Total Iron			10 2
Total Calcium			821 0
Total Phosphorus			724 0
90	Bread whole wheat	3 sl	1 8
100	Broccoli	1 s	1 4
60	Meat med fat	2 oz	1 4
7 0	Milk	3 c	1 5
200	Potato	1 L	2 6
30	Prunes	3 m	0 9
30	Shredded wheat	1 b	1 0
Total Iron			10 6
Total Calcium			1094 0
Total Phosphorus			1235 0
100	Eggs	2	3 0
60	Meat lean	2 oz	1 8
480	Milk	2 c	1 0
180	Oats rolled ck	1 s d	1 5
100	Peas	1 s d	2 1
30	Raisins	2 T	0 9
Total Iron			10 3
Total Calcium			683 0
Total Phosphorus			10 5 0

TABLE 37

COPPER

Average Servings of Some Common Foods Arranged According to Their Content of Copper*

Grams	Food	Copper
	More than 300 Micrograms	
	Cereals	
100	Corn	449
	Fish	
30	Oysters	1087
	Fruit	
100	Avocado	71
	Meat Poultry	
30	Liver	1036
	Vegetables	
100	Kale	328
	290–200 Micrograms	
	Cereals	
30	Barley, entire	226
30	Oats	222
30	Rye, entire	197
30	Wheat	236
	Fruit	
100	Banana	200
	Vegetables	
30	Beans, dry	287
30	Beans, lima dry	275
30	Peas dried	241
100	Spinach	197
	190–100 Micrograms	
	Cereals	
30	Flour, whole wheat	131
	Dairy Products	
50	Egg	127
	Fruit	
100	Grapes	98
100	Pears	134
	Vegetables	
100	Asparagus	141
100	Beans, string	126
100	Beets	187
100	Cabbage	99
100	Carrots	111
100	Lettuce loose leaf	145
100	Onions	130
100	Pepper, green	107
100	Potato	164
100	Sweet potato	184
100	Tomato	97
	90–10 Micrograms	
	Cereal and Bread	
30	Bread, white	62
30	Flour white	44
30	Rice, white	55
	Dairy Products	
240	Milk	84
	Fish	
30	Haddock	65
30	Halibut	48
30	Mackerel	69
	Fruit	
100	Apple	71
100	Cantaloup	57
100	Orange	76
100	Plums	80
30	Prunes, dried	88
100	Strawberries	75
	Vegetables	
100	Lettuce, head	69
100	Turnip	85

* Sherman, Chemistry of Food and Nutrition 6th ed , Macmillan Co , 1941

TABLE 38

MANGANESE

Average Servings of Some Common Foods Arranged According to Their Content of Manganese*

Grams	Food	Manganese
	More than 400 Micrograms	
	Cereals	
30	Barley, entire	505
30	Flour, whole wheat	1284
30	Oats	1484
30	Rye, entire	920
30	Wheat	1378
	Fruit	
100	Banana	642
	Vegetables	
30	Beans, dry	451
30	Beans lima, dry	497
100	Beets	577
100	Corn	683
100	Kale	587
100	Lettuce head	777
100	Lettuce loose leaf	1240
30	Peas dried	597
100	Spinach	828
100	Sweet potato	407
	390–300 Micrograms	
	Cereals	
30	Rice white	304
	Vegetables	
100	Beans string	326
100	Onions	363
	290–200 Micrograms	
	Cereals	
30	Flour white	214
	Fruit	
100	Avocado	291
100	Strawberries	219
	Vegetables	
100	Carrots	247
	190–100 Micrograms	
	Fruits	
30	Prunes, dried	131
	Meat	
30	Liver	103
	Vegetables	
100	Asparagus	190
100	Cabbage	114
100	Pepper, green	126
100	Potato	173
100	Tomato	189
	90–10 Micrograms	
	Bread	
30	Bread white	93
	Dairy Products	
50	Egg	17
240	Milk	15
	Fish	
30	Haddock	5
30	Halibut	3
30	Mackerel	6
30	Oysters	89
30	Honey	63
	Fruit	
100	Apple	84
100	Cantaloup	42
100	Grapes	83
100	Orange	25
100	Pears	64
100	Plums	96
	Vegetables	
100	Turnip	83

* Sherman Chemistry of Food and Nutrition, 6th ed , Macmillan Co , 1941

TABLE 39
POTASSIUM

AVERAGE SERVINGS OF SOME COMMON FOODS ARRANGED ACCORDING TO THEIR CONTENT OF POTASSIUM*

Grams	Food	Potassium
	More than 400 Micrograms	
	Fruit	
100	Avocado	653
	Vegetables	
30	Beans lima dried	518
100	Dandelion greens	461
100	Parsnips	417
100	Potato, white	496
100	Spinach	489
	300–400 Micrograms	
	Fruit	
100	Banana	373
100	Rhubarb	358
	Vegetables	
100	Beets	336
100	Broccoli	395
100	Carrots	311
100	Cauliflower	313
100	Escarole	381
100	Kale	387
100	Lettuce	311
100	Mushrooms	384
100	Potato sweet	373
100	Squash winter	320
100	Tomato juice	310
100	Turnip	327
100	Watercress	301
	Dairy Products	
240	Milk	343
	Sweets	
30	Molasses	371
	200–300 Micrograms	
	Fruit	
100	Cantaloup	249
100	Cherries	246
30	Dates	203
30	Figs	297
100	Grapes	254
100	Peaches	256
100	Pineapple	214
100	Plums	232
30	Prunes	254
30	Raisins	212
	Vegetables	
100	Beans string	251
100	Cabbage	294
100	Celery	291
100	Egg plant	2[illegible]9
100	Peas	284
100	Tomato	268
	Nuts	
30	Almonds	228
	100–200 Micrograms	
	Breads Cereals	
30	Barley entire	146
30	Bread whole wheat	135
30	Oatmeal	129
30	Rice whole	103
30	Wheat, entire	140
	Fish	
30	Cod fish	10[illegible]
30	Halibut	10[illegible]
30	Mackerel	125
	Fruit	
100	Apple	116
100	Blackberries	181
100	Grapefruit	198
100	Grape juice	139
100	Lemon	148
100	Orange	181
100	Pears	129
100	Raspberries	190
100	Strawberries	145
	Meat	
30	Beef lean	10
30	Chicken	112
30	Ham med lean	115
30	Heart	111
30	Veal	108
	Nuts	
30	Brazil nuts	181
30	Walnuts	158
	Sweets	
30	Chocolate	133
	Vegetables	
100	Asparagus	187
100	Cucumber	100
100	Onions	183
100	Squash summer	150
	Less than 100 Micrograms	
	Flour Bread Cereal	
30	Barley pearl	33
30	Bread white	33
30	Farina	36
30	Flour buckwheat	39
30	Flour whole wheat	97
30	Flour white	39
30	Macaroni	52
30	Rice white	4
	Dairy Products	
15	Butter	2
30	Cheese hard	40
30	Cream	39
50	Egg	69
	Fish	
30	Blue fish	95
30	Clams	52
30	Flounder	94
30	Haddock	94
30	Salmon	95
	Fruit	
100	Blueberries	65
100	Cranberries	80
	Meat	
30	Bacon	72
30	Lamb	91
30	Pork med fat	91

* Sherman Chemistry of Food and Nutrition 6th ed Macmillan Co 1941

TABLE 40

SODIUM CHLORIDE

AVERAGE SERVINGS* OF SOME COMMON FOODS ARRANGED ACCORDING TO THEIR CONTENT OF SODIUM CHLORIDE†

Grams	Food	Sodium Chloride
	Less Than 0 10 Gram	
	Breads and Cereals	
30	Bread, white, low salt	0 023
30	Cornmeal	0 027
8	Cracker, graham	0 075
6	Cracker, uneeda	0 077
30	Cream of wheat	0 037
7	Flour, white	0 008
30	Macaroni	0 036
30	Matzoh	0 001
30	Oat rolled	0 033
30	Rice, white	0 027
30	Shredded wheat	0 034
	Dairy Products	
5	Butter, unsalted	0 001
30	Cheese, cottage	0 084
50	Egg	0 090
24	Egg yolk	0 027
18	Egg white	0 060
	Fruit	
100	Apple	0 008
100	Applesauce	0 008
100	Apricots fresh	0 003
100	Blueberries	0 010
100	Cantaloup	0 067
100	Cherries	0 020
30	Figs	0 017
100	Grapefruit	0 008
100	Grapes	0 010
100	Lemon juice	0 005
100	Peach	0 010
100	Pear	0 020
100	Pineapple	0 080
30	Raisins	0 040
100	Raspberries	0 020
100	Rhubarb	0 059
100	Strawberries	0 010
100	Watermelon	0 010
	Miscellaneous	
30	Almonds	0 024
5	Cocoa	0 005
100	Grape juice	0 003
30	Honey	0 014
15	Mayonnaise	0 064
30	Peanuts	0 030
30	Walnuts	0 020
	Vegetables	
100	Asparagus	0 060
100	Brussels sprouts	0 070
100	Beans lima fresh	0 004
100	Beans string	0 040
100	Cabbage	0 040
100	Carrots	0 0[illegible]0
100	Cauliflower	0 060
100	Corn canned	0 026
	Vegetables—Continued	
100	Eggplant	0 040
100	Onions	0 034
100	Parsnips	0 050
100	Peas	0 040
100	Potato	0 060
100	Pumpkin	0 060
100	Squash	0 010
100	Turnip	0 070
100	Tomato	0 060
	More Than 0 10 Gram	
	Breads and Cereals	
30	Bread rye	0 507
30	Bread white	0 130
30	Bread, whole wheat	0 300
	Dairy Products	
5	Butter salted	0 510
240	Buttermilk	0 384
30	Cheese, American	0 246
30	Cheese cream	0 375
120	Cream, heavy	0 237
120	Cream, medium	0 158
240	Milk	0 432
	Fish	
90	Cod fresh	0 213
90	Haddock	0 171
90	Halibut	0 198
90	Mackerel fresh	0 228
90	Salmon, canned	0 116
90	Salmon, fresh	0 213
90	Shad	0 153
	Fruit	
100	Banana	0 206
	Meat and Poultry	
30	Bacon	0 600
90	Chicken	0 144
90	Ham	3 6–4 5
90	Liver	0 1[illegible]6
90	Meat	0 153
	Miscellaneous	
100	Ice cream	0 198
130	Molasses	0 1[illegible]7
	Vegetables	
100	Beets	0 100
100	Celery	0 260
100	Dandelion greens	0 168
100	Lettuce	0 120
100	Potato, sweet	0 160
100	Spinach	0 120

* Cf Table of Food Values and Measures (Table 15) for amounts of average servings

† Pattee Alida *Dietetics*, 18th ed , A F Pattee Also Proudfit Fairfax *Nutrition and Diet Therapy* 6th ed Macmillan Co , 1934

TABLE 39
POTASSIUM

AVERAGE SERVINGS OF SOME COMMON FOODS ARRANGED ACCORDING TO THEIR CONTENT OF POTASSIUM*

Grams	Food	Potassium
	More than 400 Micrograms	
	Fruit	
100	Avocado	653
	Vegetables	
30	Beans lima dried	518
100	Dandelion greens	461
100	Parsnips	417
100	Potato, white	496
100	Spinach	489
	300-400 Micrograms	
	Fruit	
100	Banana	373
100	Rhubarb	358
	Vegetables	
100	Beets	336
100	Broccoli	395
100	Carrots	311
100	Cauliflower	313
100	Escarole	381
100	Kale	387
100	Lettuce	311
100	Mushrooms	384
100	Potato sweet	373
100	Squash winter	320
100	Tomato juice	310
100	Turnip	327
100	Watercress	301
	Dairy Products	
240	Milk	343
	Sweets	
30	Molasses	371
	200-300 Micrograms	
	Fruit	
100	Cantaloup	249
100	Cherries	246
30	Dates	203
30	Figs	297
100	Grapes	254
100	Peaches	256
100	Pineapple	214
100	Plums	232
30	Prunes	254
30	Raisins	212
	Vegetables	
100	Beans string	251
100	Cabbage	294
100	Celery	291
100	Egg plant	229
100	Peas	284
100	Tomato	268
	Nuts	
30	Almonds	278
	100-200 Micrograms	
	Breads Cereals	
30	Barley entire	146
30	Bread whole wheat	135
30	Oatmeal	129
30	Rice whole	103
30	Wheat entire	140
	Fish	
30	Cod fish	10[illegible]
30	Halibut	102
30	Mackerel	125
	Fruit	
100	Apple	116
100	Blackberries	181
100	Grapefruit	198
100	Grape juice	139
100	Lemon	148
100	Orange	181
100	Pears	129
100	Raspberries	190
100	Strawberries	145
	Meat	
30	Beef lean	102
30	Chicken	112
30	Ham med lean	115
30	Heart	111
30	Veal	108
	Nuts	
30	Brazil nuts	181
30	Walnuts	158
	Sweets	
30	Chocolate	133
	Vegetables	
100	Asparagus	187
100	Cucumber	100
100	Onions	183
100	Squash summer	150
	Less than 100 Micrograms	
	Flour Bread Cereal	
30	Barley pearl	33
30	Bread white	33
30	Farina	36
30	Flour buckwheat	39
30	Flour whole wheat	97
30	Flour white	39
30	Macaroni	52
30	Rice white	24
	Dairy Products	
15	Butter	2
30	Cheese hard	40
30	Cream	39
50	Egg	69
	Fish	
30	Blue fish	95
30	Clams	52
30	Flounder	94
30	Haddock	94
30	Salmon	95
	Fruit	
100	Blueberries	65
100	Cranberries	80
	Meat	
30	Bacon	72
30	Lamb	91
30	Pork med fat	91

* Sherman Chemistry of Food and Nutrition 6th ed Macmillan Co 1941

TABLE 40

SODIUM CHLORIDE

Average Servings* of Some Common Foods Arranged According to Their Content of Sodium Chloride†

Grams	Food	Sodium Chloride
	Less Than 0 10 Gram	
	Breads and Cereals	
30	Bread white, low salt	0 023
30	Cornmeal	0 027
8	Cracker, graham	0 075
6	Cracker, uneeda	0 077
30	Cream of wheat	0 037
7	Flour, white	0 008
30	Macaroni	0 036
30	Matzoh	0 001
30	Oat, rolled	0 033
30	Rice white	0 027
30	Shredded wheat	0 034
	Dairy Products	
5	Butter, unsalted	0 001
30	Cheese, cottage	0 084
50	Egg	0 090
24	Egg yolk	0 027
18	Egg white	0 060
	Fruit	
100	Apple	0 008
100	Applesauce	0 008
100	Apricots fresh	0 003
100	Blueberries	0 010
100	Cantaloup	0 067
100	Cherries	0 020
30	Figs	0 017
100	Grapefruit	0 008
100	Grapes	0 010
100	Lemon juice	0 005
100	Peach	0 010
100	Pear	0 020
100	Pineapple	0 080
30	Raisins	0 040
100	Raspberries	0 020
100	Rhubarb	0 059
100	Strawberries	0 010
100	Watermelon	0 010
	Miscellaneous	
30	Almonds	0 024
5	Cocoa	0 005
100	Grape juice	0 003
30	Honey	0 014
15	Mayonnaise	0 064
30	Peanuts	0 030
30	Walnuts	0 020
	Vegetables	
100	Asparagus	0 060
100	Brussels sprouts	0 070
100	Beans lima fresh	0 004
100	Beans string	0 040
100	Cabbage	0 040
100	Carrots	0 050
100	Cauliflower	0 060
100	Corn canned	0 026
	Vegetables—Continued	
100	Eggplant	0 040
100	Onions	0 034
100	Parsnips	0 050
100	Peas	0 040
100	Potato	0 060
100	Pumpkin	0 060
100	Squash	0 010
100	Turnip	0 070
100	Tomato	0 060
	More Than 0 10 Gram	
	Breads and Cereals	
30	Bread, rye	0 507
30	Bread white	0 130
30	Bread whole wheat	0 300
	Dairy Products	
5	Butter salted	0 510
240	Buttermilk	0 384
30	Cheese, American	0 246
30	Cheese cream	0 375
120	Cream, heavy	0 237
120	Cream, medium	0 158
240	Milk	0 432
	Fish	
90	Cod fresh	0 213
90	Haddock	0 171
90	Halibut	0 198
90	Mackerel, fresh	0 228
90	Salmon, canned	0 116
90	Salmon, fresh	0 213
90	Shad	0 153
	Fruit	
100	Banana	0 206
	Meat and Poultry	
30	Bacon	0 600
90	Chicken	0 144
90	Ham	3 6–4 5
90	Liver	0 156
90	Meat	0 153
	Miscellaneous	
100	Ice cream	0 198
130	Molasses	0 157
	Vegetables	
100	Beets	0 100
100	Celery	0 260
100	Dandelion greens	0 168
100	Lettuce	0 120
100	Potato, sweet	0 160
100	Spinach	0 120

* Cf Table of Food Values and Measures (Table 15) for amounts of average servings

† Pattee Alida *Dietetics*, 18th ed , A F Pattee Also Proudfit Fairfax *Nutrition and Diet Therapy* 6th ed , Macmillan Co , 1934

TABLE 41
VITAMIN A EQUIVALENTS

Approximately 1000 International Units Various foods equivalent to two eggs

Grams	Food	Household Measure
	Dairy Products	
38	Butter*	2½ Tablespoons
68	Cheese American (cheddar)	2¼ ounces
45	Cream heavy, 40%	3 Tablespoons or 5½ Tablespoons, whipped
90	Cream light, 20%	6 Tablespoons
100	Eggs	2 medium
200	Ice cream, commercial	1 cup
540	Milk whole	2¼ cups
53	Oleomargarine fortified	3½ Tablespoons
	Meat	
3	Liver, beef	⅑ ounce
4	Liver, calves	⅛ ounce
4	Liver, pork	⅛ ounce
	Fruits	
13	Apricots, dried	2½ halves
100	Cantaloup	¼
67	Nectarine	1⅓ medium
66	Peach, yellow	1 small or ⅔ medium
75	Prunes stoned	7½ medium
	Vegetables	
7	Beet greens	½ Tablespoon
100	Beans, string	½ cup or 1 sauce dish
17	Broccoli, entire plant	1⅓ Tablespoon
17	Carrots	⅙ large
12	Chard Swiss	1 Tablespoon, scant
188	Corn sweet	2 small ears or ⅞ cup
10	Dandelion greens	1 Tablespoon, scant
7	Escarole	⅓ leaf small
20	Lettuce green leaf	2 leaves
100	Peas fresh	½ cup or 1 sauce dish
135	Peas green dried	9 Tablespoons
33	Pepper green	⅓ large
30	Potato sweet	⅓ small
50	Pumpkin	4 Tablespoons or ¼ cup
6	Spinach	⅓ Tablespoon, scant
35	Squash winter	3 Tablespoons scant
100	Tomato fresh	1 medium
50	Watercress	½ small bunch

* The vitamin A content of butter varies according to the season or the type of feed for the animals

TABLE 42
THIAMINE EQUIVALENTS

Approximately 75 micrograms Various foods equivalent to 1 egg

Grams	Food	Household Measure
	Dairy Products	
330	Cheese, American (cheddar)	11 ounces
240	Cream heavy 40%	1 cup
240	Cream light, 20%	1 cup
50	Egg	1
160	Milk, whole	⅔ cup
	Meat	
50	Beef lean	1¾ ounces
30	Brain average	1 ounce
30	Heart average	1 ounce
30	Kidney average	1 ounce
30	Lamb medium fat	1 ounce
20	Liver beef	⅔ ounce
20	Liver pork	⅔ ounce
6	Pork lean	¼ ounce
53	Poultry dark	1¾ ounces
83	Poultry, light	2¾ ounces
30	Veal lean	1 ounce
	Fish	
90	Flounder	3 ounces
90	Halibut	3 ounces
60	Mackerel	2 ounces
23	Oysters	1½
105	Salmon, canned	1 cup scant
	Fruits	
200	Apple	2 small or 1 large
150	Banana	1½ medium
100	Grapefruit	½ medium
66	Orange	⅔ medium or ⅓ cup juice
100	Pineapple juice canned	½ cup scant
66	Plums	2
40	Prunes stoned	4 medium
	Vegetables	
46	Asparagus fresh	3½ stalks
100	Beans green string fresh	½ cup or 1 sauce dish
26	Beans lima, fresh	2 tablespoons
7	Beans soy dried	1½ teaspoons
90	Broccoli entire plant	½ cup scant
75	Carrots	¾ large
75	Corn canned	3 tablespoons
50	Kale	6 tablespoons
100	Lettuce head	¼ head
15	Peas dried	1 tablespoon
20	Peas fresh	1½ tablespoons
80	Potato sweet	½ small
75	Potato white	¾ small
78	Spinach	6 tablespoons
100	Tomato	1 medium
	Breads	
24	Bread cracked wheat	⅔ slice
60	Bread rye light	2 slices
38	Bread, white enriched, min	1½ slices
22	Bread, whole wheat	¾ slice
	Cereals	
15	Cream of wheat enriched dry	1½ tablespoon or ⅓ cup cooked
10	Oats rolled dry	1½ tablespoons or ¼ cup cooked
30	Shredded wheat	1 biscuit
	Nuts	
15	Brazil	2
15	Peanuts roasted	15
15	Peanut butter	1 tablespoon
15	Pecans shelled	12 halves
18	Walnuts	9 halves

TABLE 43

RIBOFLAVIN EQUIVALENTS

Approximately 125 micrograms Various foods equivalent to 1 egg

Grams	Food	Household Measure
	Dairy Products	
20	Cheese, American (cheddar)	4 teaspoons
90	Cream, heavy, 40%	6 tablespoons
75	Cream, light, 20%	5 tablespoons
50	Egg, whole	1
38	Milk, evaporated	2½ tablespoons
60	Milk, whole	4 tablespoons or ¼ cup
	Meat	
60	Beef, medium fat	2 ounces
50	Brain, average	1⅔ ounces
15	Heart, average	½ ounce
6	Kidney, average	⅕ ounce
51	Lamb, medium fat	1¾ ounces
4	Liver, beef	1/7 ounce
4	Liver, calves	⅛ ounce
60	Pork, medium fat	2 ounces
60	Poultry, dark	2 ounces
	Fish	
60	Haddock	2 ounces
240	Mackerel	8 ounces
60	Salmon	2 ounces
	Fruits	
150	Banana	1½ medium
200	Cantaloup	½
200	Grapefruit	1 medium
250	Orange	2½ medium
35	Prunes stoned	3½ medium
105	Raisins	7 tablespoons
	Vegetables	
130	Asparagus	10 stalks
100	Beans, green string, fresh	½ cup or 1 sauce dish
65	Beans, lima fresh	5 tablespoons
15	Beans soy dried	1 tablespoon
20	Beet greens	1½ tablespoons
126	Cabbage partly green	1 cup scant
133	Carrots	1⅓ large
78	Cauliflower	6 tablespoons
200	Corn, yellow	2 medium ears
50	Dandelion greens	¼ cup
50	Endive	1 leaf
50	Escarole	2 leaves
52	Kale	4 tablespoons
80	Lettuce, green leaf	8 leaves
65	Peas fresh	5 tablespoons
45	Peas dried green	3 tablespoons
300	Potato white	3 small
34	Spinach	2½ tablespoons
300	Tomato	3 medium
50	Watercress	½ small bunch
	Breads	
90	Bread, cracked wheat	3 slices
360	Bread, rye light	12 slices
75	Bread white enriched min	2½ slices
75	Bread, whole wheat	2½ slices
	Cereals	
60	Oats rolled dry	½ cup or 1½ cups cooked
75	Shredded wheat	2½ biscuits
	Nuts	
100	Peanuts	100
90	Peanut butter	6 tablespoons
36	Pecans shelled	30 halves

TABLE 44
NIACIN EQUIVALENTS

Approximately 600 micrograms   Various foods equivalent to ¼ oz beef

Grams	Food	Household Measure
	Dairy Products	
300	Cheese, American (cheddar)	10 ounces
1000	Eggs whole	20
720	Milk, whole	3 cups
	Meat	
8	Beef medium fat	¼ ounce
10	Brain average	⅓ ounce
10	Heart average	⅓ ounce
15	Kidney average	½ ounce
8	Lamb, medium fat	¼ ounce
4	Liver beef	⅛ ounce
8	Pork medium fat	¼ ounce
8	Poultry, light	¼ ounce
	Fish	
15	Flounder	½ ounce
10	Halibut	⅓ ounce
10	Salmon, fresh or canned	⅓ ounce
	Fruits	
50	Cranberries	½ cup
300	Grapefruit, fresh	1½ medium
300	Orange	3 medium
66	Peach, yellow fresh	⅔ medium
120	Apple	1 medium
100	Banana	1 medium
30	Dates dried	3–4
105	Raisins seeded	7 tablespoons
	Vegetables	
120	Asparagus fresh	9 stalks
15	Beans soy, dried	1 tablespoon
200	Cabbage partly green	1⅓ cups
120	Lettuce head	¼ head
85	Spinach	¼ cup, scant
100	Tomato fresh	1 medium
100	Beans green string fresh	⅔ cup
45	Carrots	½ medium
50	Peas, fresh	⅓ cup
30	Beans lima dried	2 tablespoons
50	Potato white	⅓ small
	Breads	
68	Bread, white enriched min	2¼ slices
30	Bread whole wheat	1 slice
35	Ry Krisp	5
	Cereals	
60	Cornflakes	3 cups
150	Macaroni dry	1¼ cups
15	Maltex dry	1 tablespoon
45	Oats rolled dry	¾ cup
15	Shredded wheat	⅓ biscuit
	Nuts	
30	Almonds, shelled	24–30 nuts
4	Peanut butter	¾ teaspoon

TABLE 45

ASCORBIC ACID EQUIVALENTS

Approximately 54 milligrams Various foods equivalent to one orange

Grams	Food	Household Measure
	Fruits	
900	Apple	9 small
500	Banana	5 medium
200	Cantaloup	½
66	Grapefruit, fresh	⅔
134	Grapefruit juice, canned	⅔ cup, scant
134	Lemon juice	⅔ cup, scant
100	Orange	1 medium
100	Orange juice	½ cup scant
700	Peach, yellow	7 medium
300	Pineapple, fresh	3 slices ¾″
800	Pineapple juice, canned	4 cups, scant
140	Strawberries	14 large
200	Tangerine	4 small
	Vegetables raw	
75	Cabbage, partly green	½ cup
400	Lettuce, head	1 head
50	Pepper green	½ large
500	Potato, white	5 small
100	Spinach	⅓ cup
250	Tomato, fresh	2½ medium
250	Tomato juice	1¼ cups
100	Watercress	1 small bunch

TABLE 46

ACID ASH FORMING FOODS

Average Servings of Some Common Foods Arranged according to Their Excess of Acid Ash**

Grams	Food	Household Measure	Excess Acidity in cubic centimeters Normal Acid—HCl
	Bread		
30	Bread, graham	1 sl	2 0
30	Bread, rye	1 sl	2 0
30	Bread, white	1 sl	2 1
30	Bread, wh wheat	1 sl	2 2
	Cereals		
30	Barley	3 T	3 12
30	Cornflakes	1 c	1 6
30	Farina	3 T	2 9
30	Oatmeal, dry	5 T	3 6
30	Macaroni	4 T	2 9
30	Rice, brown	2 T	2 8
30	Rice, polished	3 T	2 8
10	Rice, puffed	½ c	0 9
30	Shredded wheat	1 b	3 6
30	Spaghetti	4 T	2 9
10	Wheat, puffed	¾ c	1 1
30	Whole wheat	3 T	3 6
	Crackers		
8	Graham	1	1 0
4	Saltines	1	0 3
6	Soda crackers	1	0 5
	Dairy Products		
30	Cheese, cheddar	1 p (1"x1½ x1")	1 62
35	Egg white	1 white	1 7
50	Egg whole	1	5 5
15	Egg yolk	1 yolk	3 75
	Fish		
30	Codfish (salt)	1 oz	3 8
90	Haddock	3 oz (3"x2½"x1)	7 7
90	Halibut	3 oz	8 37
90	Herring smoked	3 oz	9 0
90	Mackerel	3 o	8 4
30	Oysters	2 m	4 53
90	Salmon (C)	3 oz	9 63
90	Salmon, fresh	3 oz	9 9
30	Sardines	4 sm	3 39
30	Smelts	1 oz or 2 fishes	2 6

TABLE 46—*Concluded*

Grams	Food	Household Measure	Excess Acidity in cubic centimeters Normal Acid—HCl
	Flour		
8	Flour, white	1 T	0 8
	Fruits		
100	Cranberries	¾ c	*
100	Plums	3 (1½″ d)	*
50	Prunes	5 sm	*
	Meats		
15	Bacon	2 thick or 3 thin strips	1 5
90	Beef	3 oz	9 0
90	Chicken	3 oz	9 63
90	Ham, boiled	3 sl	9 0
90	Ham, m fat	3 sl (4½″x4½″x⅛″)	6 7
90	Ham, smoked, lean	3 sl (4¼″x4½″x⅛″)	8 7
90	Ham smoked, m	3 sl (4½″x4½″x⅛″)	7 5
	Lamb		—
90	Liver	(2¾″x2½″x¼″)	9 0
90	Pork, lean	½″ thick	9 0
90	Pork, m fat	1 chop (½″ thick)	7 5
90	Veal	3 oz	9 8
	Miscellaneous		
28	Cake, plain	1¾″ cu	1 2
24	Cookies sugar	2	1 0
45	Doughnuts	1	3 3
15	Mayonnaise	1 T	0 21
15	Peanut butter	1 sc T	0 7
30	Peanuts	33-35 nuts	1 2
30	Walnuts, English	8-16	2 2
	Vegetables		
100	Corn, sweet	4 T	1 8
100	Lentils	½ c , ck	5 1

* These fruits "give rise to hippuric acid which remains *unburned, so that they* increase rather than decrease the acidity of the urine '—Sherman, Henry C , *Chemistry of Food and Nutrition* p 278 Macmillan Co 1932

** Waller, *Nutritive Value of Foods* George Wahr Ann Arbor, and Stern and Spitz, *Food for the Worker*, M Barrows

TABLE 47

ALKALINE ASH FORMING FOODS

Average Servings of Some Common Foods Arranged according to Their Excess of Alkaline Ash*

Grams	Food	Household Measure	Excess Alkalinity in cubic centimeters Normal Alkal — NaOH
	Dairy Products		
240	Buttermilk	1 c	5 3
30	Cream, m	2 T	0 2
30	Cream, heavy	2 T	0 12
30	Milk, evaporated	2 T	1 38
240	Milk, whole	1 c	5 5
240	Milk, skim	1 c	4 3
	Fruits		
	Fresh—5 per cent		
100	Cantaloup	¼ melon	7 5
100	Muskmelon	¼ melon	7 5
100	Rhubarb	1 c	8 5
	Fresh—10 per cent		
100	Grapefruit	½	5 6
100	Lemon juice	7 T	4 0
100	Orange	1 m	5 6
100	Orange juice	½ c sc	4 5
100	Peach	1 m	5 0
100	Watermelon	½ thin sl	2 7
	Fresh—15 per cent		
100	Apple	1 sm	3 7
100	Apricots	2 (1½ d)	6 8
100	Grapes	1 sm bunch	2 7
100	Pear	1 m	3 7
100	Pineapple	1 sl (¾" thick)	6 8
	Fresh—20 per cent		
100	Banana	1 sm	3 6
100	Cherries	25 sm (sour)	6 1
	Dried—over 20 per cent		
30	Currants	¼ c	1 7
30	Dates	3–4 stoned	3 3
30	Raisins	¼ c seeded	7 1
	Miscellaneous		
100	Applesauce	½ c	4 5
30	Cocoanut	1 oz	2 1
100	Grape juice	½ c sc	3 9
100	Ice cream, vanilla	2 hp T	0 5
30	Marmalade orange	1 r T	0 1
23	Molasses	1 T	13 7
135	Pie apple	⅙ pie (9" d)	2 2

TABLE 47—*Concluded*

Grams	Food	Household Measure	Excess Alkalinity in cubic centimeters Normal Alkali—NaOH
	Nuts		
10	Almonds	10 nuts	1 23
	Vegetables		
	Fresh—5 per cent		
100	Asparagus	8 st	0 85
100	Beans, string (C)	1 s	2 7
100	Beet greens	1 s	27 0
100	Cabbage	1 s	6 0
100	Cauliflower	1 s	5 3
100	Celery	4 st	7 8
100	Cucumber	1 sm	7 9
100	Endive	1 s	7 4
100	Lettuce	¼ head or 16 lvs	7 4
100	Radishes	10	2 9
100	Sauerkraut	1 s	5 7
100	Spinach	1 s	27 0
100	Tomatoes	1 m	5 6
	Fresh—10 per cent		
100	Beans, string	1 s	5 4
100	Beets	1 s	10 9
100	Brussels sprouts	1 s	6 0
100	Carrots	1 s	10 8
100	Mushrooms	4 L	4 0
100	Onions	1 s	1 5
100	Pumpkin	1 s	1 5
100	Squash, Hubbard	1 s	2 8
100	Turnip	1 s	2 7
	Fresh—15 per cent		
100	Parsnips	1 s	12 0
100	Peas	1 s	1 2
	Over 20 per cent		
100	Beans, baked	1 s	6 4
100	Beans lima (C)	1 s	9 2
100	Beans lima, fresh	1 s	14 0
30	Peas dried (C)	3 T	1 5
100	Potato, sweet	1 sm	6 7
100	Potato, white	1 sm	7 1

* Waller, *Nutritive Value of Foods* George Wahr, Ann Arbor and Stern and Spitz, *Food for the Worker* M Barrows

TABLE 48

AVERAGE SERVINGS OF SOME COMMON FOODS ARRANGED FOR COMPARISON OF THEIR EXCESS OF ACID ASH OR EXCESS OF ALKALINE ASH IN TERMS OF NORMAL SOLUTION

Excess of Acid or Alkaline Ash	More than 10 grams	9.9 to 9.0 grams	8.9 to 8.0 grams	7.9 to 7.0 grams	6.9 to 6.0 grams	5.9 to 5.0 grams	4.9 to 4.0 grams	3.9 to 3.0 grams	2.9 to 2.0 grams	1.9 to 1.0 gram	Less Than 1.0 gram
	Meat, Fish and Poultry										
Acid Ash Forming Foods	Cod, salt 11.3 Ham, fresh, lean 10.8 Herring, smoked 16.2 Oysters 13.5	Beef, lean Chicken Fowl Liver, beef Pork, lean Salmon Veal, lean	Beef, fat Beef, m. fat Halibut Ham, smoked, lean Lamb Liver, calf Mackerel Mutton, lean Shad Veal, m. fat	Haddock Ham, smoked, m. fat Mutton, m. fat Pork, m. fat Smelts	Ham, fresh, m. fat	Cod, fresh Egg, whole		Bacon Sardines (C)			
							Miscellaneous				
							Egg yolk		Walnuts, English	Cheese, cheddar Corn, sweet Egg white	Coconut, dried Mayonnaise †Peanut butter Peanuts
							Breads and Cereals, Crackers				
								Barley Doughnut Oats, rolled Wheat, Cream of Shredded	Breads, all Farina Macaroni Noodles Rice, white Spaghetti	Cornflakes Cornmeal	Cracker, graham Saltine Soda †Flour, white Sugar cookie
	Vegetables										
Alkaline Ash Forming Foods	Beans, lima, dried 12.4 fresh 14.4 Beet greens 27.0 Beets 10.8 Carrots 10.9 Chard 13.6 Parsnips 11.8 Spinach 27.0	Beans, lima (C)	Carrots (C) Rutabaga	Celery Cucumber Lettuce Potato, white	Beans, baked (C) Potato, sweet	Beans, navy, string Cabbage Cauliflower Sauerkraut Tomatoes	Mushrooms		Beans, string (C) Pepper Radishes Squash Turnip	Dandelion greens Onions Peas, dried, fresh Pumpkin	Asparagus Asparagus (C) Peas (C)
	Fruits										
	Apricots, dried 18.6 Figs, dried 30.0		Muskmelon Rhubarb	Raisins	Apricots, fresh Cherries, sweet Orange juice	Banana Grapefruit Lemon Orange Peach	Grape juice Lemon juice Peaches (C)	Apples Dates Pear	Applesauce Currants, dried Grapes Watermelon	Pears (C)	Currants, fresh
	Miscellaneous										
	Molasses 17.8					Buttermilk Olive, green	Milk, Skim Whole	Almonds		Milk, evaporated	Cream Marmalade, orange

Other Servings: 30 grams; one each; † 1 tablespoon

Continued on next page

TABLE 48—*Concluded*

...tral Foods	*Neutral Foods*			
	Butter Cornstarch Ginger ale Lard	Oil Sugar Tapioca		

	Average Servings		*Average Servings*
Bread	30 grams	Milk	240 grams
Cereals dry	30 grams	Meat fish or poultry	90 grams
Cheese	30 grams	Nuts	30 grams
Fruits fresh	100 grams	Vegetables fresh	100 grams
Fruits dried	30 grams	Vegetables dried (legumes)	30 grams

TABLE 49

PURIN BEARING FOOD

AVERAGE SERVINGS* OF SOME COMMON FOODS ARRANGED ACCORDING TO THEIR CONTENT OF URIC ACID†

Over 15 gram	15 to 101 gram	10 to 051 gram	049 to 01 gram	Less than 01 gram	Purin Free
		Beverages‡			
			Beer 0 0230	Coffee (1 T) 0 0030 Tea (1 t) 0 0004	
		B ead and Crackers			
					White
		Cereals (Refined)			
					Barley Hominy Rice Sago Tapioca Wheat
		Da ry Products			
			Cheese dairy 0 0195	Cheese cream 0 0045	Butter Cheese Edam Limburger Roquefort Swiss Cream Eggs Milk
		Fish			
Trout 0 1512 Herring 0 1563	Anchovies 0 1395 Carp 0 1458 Codfish 0 1076 Pike 0 1 15 Sardines 0 1076	Crab 0 0540 Herring red 0 0756 Lobster 0 0594 Oysters 0 0783 Salmon, fresh 0 0648	Salmon smoked 0 0459		Fish Roe (Caviar)
		Meat			
Kidney 0 2160 Liver 0 2511 Squab 0 1566 Sweetbread 0 8910	Liverwurst 0 1076 Tongue smoked 0 1485 Veal 0 10 6	Beef 0 0999 Brains 0 0756 Chicken 0 0783 Goose 0 0899 Ham boiled 0 0675 smoked 0 0648 Mutton 0 070[illegible] Pheasant 0 0918 Pork 0 1007			
		Nuts			
					All except peanuts
		Vegetables			
		Beans 0 0510 Mushrooms 0 0540 Peas dried 0 0540 Spinach 0 0720	Asparagus 0 0740 Beans shell 0 0743 Cauliflower 0 0740 Lentils 0 0436 Radishes 0 0150	Beans string 0 0060 Cabbage 0 0060 Garlic—trace Lettuce 0 0030 Potato white 0 0060	All except those included in previous lists

* Cf Table of Food Values and Measures (Table 15) for amounts of average servings

† Based on the table of J Schmidt and G Bessau taken from J Brugsch Gicht in Kraus and Brugsch Specielle Pathologie and Therapie der Inneren Krankheiten Berlin, p 273

‡ Harrop George A Jr M D *Diet in Disease* P Blakiston s Son & Co Inc Philadelphia

TABLE 50

CHOLESTEROL

AVERAGE SERVINGS OF VARIOUS FOODS ARRANGED ACCORDING TO THEIR CONTENT OF CHOLESTEROL (ANIMAL SOURCES)

Grams	Food	Household Measure	More than 1 gram	0 99 to 0.50 gram	0 49 to 0 10 gram	0 09 to 0 01 gram	Less than 0 01 gram
30	Bacon	6 thin sl				0 023	
15	Bacon, fat	1 T				0 02	
90	Beef, fresh	3½" x 2½" x ¾"				0 07	
30	Blood, beef	2 T				0 06	
30	Brains, cattle	1 oz	1 11				
15	Butter	1 T				0 03	
30	Cheese cream	2 r T				0 03	
90	Chicken	3½" x 2½" x ¾"			0 47		
18	Egg yolk	1			0 39		
30	Fats, lard, suet	2 T			0 11		
90	Kidney, mutton	½ c, chopped	3 06				
90	Kidney	¾ c, chopped			0 22		
90	Liver	3½" x 2½" x ¾"	3 06				
90	Liver, goose	¾ c, chopped			0 44		
90	Meat, chicken	3½" x 2½" x ¾"			0 10		
30	Milk, cows	2 T					0 α
240	Milk, cows'	1 c				0 072	
30	Muscle, dried beef	1 oz				0 07	
30	Pancreas, calf	1 oz		0 94			
90	Pork	3½" x 2½" x ¾"				0 04	
90	Rabbit, whole	¾ c, chopped			0 105		
30	Roe, Salmon	1 oz		0 66			
30	Thymus, calf	1 oz		0 69			
90	Veal	3½" x 2½" x ¾"				0 08	

Adapted from the table by John Russell Twiss, M D, J A M A, Vol 101 No 24, p 341, December 9 1933

TABLE 51

CHOLESTEROL

AVERAGE SERVINGS OF VARIOUS FOODS ARRANGED ACCORDING TO THEIR CONTENT OF CHOLESTEROL

(Vegetable Sources)

Grams	Food	Household Measure	49 to 10 gram	09 to 01 gram	Less than 01 gram
30	Almonds	21–30 nuts		0 016	
100	Apples	1 sm			0 007
100	Apricots	3 m			0 003
100	Artichokes, French	4 sm hea ts		0 016	
100	Asparagus	8 st		0 010	
100	Bananas	1 sm			0 008
30	Beans, flageolets, dry	3 T			0 001
100	*Beans, green, fresh*	½ c		*0 018*	
30	Beans kidney, dry	3 T		0 011	
100	Beets	2 m			0 0005
30	Bread, white	1 sl			0 004
100	Carrots	1 L or ¾ c			0 001
100	Cauliflower	6 r T		0 023	
100	Celery	4 st			0 0008
50	Chestnuts fresh	8		0 097	
30	Chocolate	1 sq		0 017	
3	Cocoa	1 t			0 0001
100	Corn sweet	⅔ c or 1 m ear	0 10		
30	Cornmeal	3 T			0 006
100	*Eggplant*	½ c			*0 002*
100	Endive, French	2 st			0 006
100	Figs black fresh	4 L		0 010	
142	Flour wheat	1 c		0 035	
100	Grapes white	24			0 006
100	Leeks	¾ c			0 0009
30	Lentils, dry	2½ T		0 012	
100	Lettuce	¼ head			0 002
15	Margarine, nut	1 T			0 006
100	Melons			0 017	
100	Mushrooms, cooked	½ c			0 002
100	Olive, black	10 L		0 018	
15	*Olive oil*	*1 T*		0 018	
100	Oranges	1 m		0 014	
100	Peaches	1 m			0 006
115	Peanut oil	½ c		0 095	
100	Pears	1 sm		0 014	
30	Peas, dry	2 T		0 018	
100	Potatoes	1 sm			0 003
50	Prunes, dry	5 m		0 012	
30	Rice, white	10 T or ¾ c			0 008
100	Sauerkraut	¾ c			0 001
25	Sorrel	½ c			0 002
100	Spinach	4 r T			0 006
100	Squash	½ c			0 003
100	Strawberries	10 L			0 009
100	Tomatoes	1 m			0 0004

Adapted from table by Milton A Bridges *Food and Beverage Analyses* p 21, Lea and Febiger 1935

TABLE 52

NORMAL RANGE FOR CERTAIN PHYSIOLOGICAL DATA

Blood	
Hemoglobin	
Children	12–15 grams per 100 cc
Adults Male	14–18 grams per 100 cc
Female	12–16 grams per 100 cc
Red cell count	
Children	4,000 000–4,500 000 per c mm
Adults Male	4 500 000–5 400 000 per c mm
Female	4 000,000–4,800,000 per c mm
White cell count	
Children	7,000–15 000 per c mm
Adults	6,000–12 000 per c mm
Non protein nitrogen	
Children	19–40 mgm per 100 cc
Adults	25–40 mgm per 100 cc
Uric acid	
Children	0 5–3 5 mgm per 100 cc
Adults	2 0–3 5 mgm per 100 cc
Urea	
Children	8–20 mgm per 100 cc
Adults	10–15 mgm per 100 cc
Sodium chloride	450–500 mgm per 100 cc
Sugar	80–120 mgm per 100 cc
Cholesterol	150–240 mgm per 100 cc
Calcium	9–11 mgm per 100 cc
Bilirubin	less than 1 0 mgm %
Sedimentation rate (Westergrem method)	
Male	up to 10 mm in 1 hour
Female	up to 15 mm in 1 hour
Creatinine	1–2 mgm per 100 cc
Phosphorus	
Children	3–7 mgm
Adults	3–4 5 mgm
Alkaline phosphatase	
Children	5–12 Bodansky units
Adults	1 5–4 Bodansky units
Acid phosphatase	less than 4 King Armstrong units
Ascorbic acid	
Children	1 5 mgm per 100 cc
Adults	0 8–2 4 mgm per 100 cc
Albumin	4 6–6 7%
Globulin	1 2–2 3%
Total protein	5 8–9 0%
Urine	
Volume	1000–2000 cc in 24 hours
Specific gravity	1010–1032
Color	Amber
Reaction	Acid to litmus
Sugar	0–trace
Albumin	0–trace
Diacetic acid	0
Sediment	
Casts	0
Red blood corpuscles	None to a rare red cell
White blood corpuscles	None to an occasional white cell
Squamous cells	More in females
Acetone	0
Phenolsulphonephthalein excretion	25% in 15 minutes, 40–60% in one hour (intravenous)
Gastric acidity	0 4–0 5% hydrochloric acid
Blood pressure	
Children	$\frac{90\text{–}110}{60\text{–}70}$
Adults	$\frac{100\text{–}150}{70\text{–}90}$
Basal Metabolic Rate	Minus 15—plus 10

TABLE 53

BIOLOGIC FOOD GROUPS* USED IN THE TREATMENT OF FOOD ALLERGY

Gramineae
- Wheat
- Rice
- Rye
- Oat
- Barley
- Corn
- Sorghum

Palmaceae
- Cocoanut
- Date

Liliaceae
- Onion
- English Garlic
- Asparagus
- Leek
- Chive

Moraceae
- Black Mulberry
- Fig
- Hops

Polygonaceae
- Buckwheat
- Rhubarb

Juglandaceae
- Black Walnut
- English Walnut
- Pecan
- Hickory
- Butternut

Betulaceae
- Hazelnut
- Filbert
- Chestnut

Chenopodiaceae
- Spinach
- Beet
- Swiss Chard

Grossulariaceae
- Currant
- Gooseberry

Cruciferae
- Radish
- Horse Radish
- Mustard
- Turnip
- Rutabago
- Cabbage
- Kale
- Brussels Sprouts
- Kohl rabi
- Cauliflower
- Broccoli

Rosaceae
- Blackberry
- Strawberry
- Raspberry

Pomaceae
- Apple
- Pear

Drupaceae
- Almond
- Plum
- Prune
- Cherry
- Apricot
- Peach

Leguminosae
- Pea
- Kidney Bean
- Lima Bean
- Lentil
- Peanut
- Navy Bean
- String Bean

Rutaceae
- Lemon
- Orange
- Grapefruit
- Tangerine

Malvaceae
- Cottonseed
- Okra, Gumbo

Umbelliferae
- Carrot
- Parsnip
- Parsley
- Celery
- Dill

Vacciniaceae
- Huckleberry
- Cranberry
- Blueberry

Solanaceae
- Potato
- Tomato
- Eggplant
- Green Pepper
- Red Pepper
- Ground Cherry

Cucurbitaceae
- Pumpkin
- Squash
- Cantaloup
- Cucumber
- Watermelon
- Muskmelon

Compositae
- (Chichoriaceae)
- Salsify Oyster Plant
- Chicory
- Lettuce
- Endive

Compositae
- (Asteraceae)
- Jerusalem Artichoke
- Artichoke

Aceraceae
- Maple Sugar

Sterculiaceae
- Cocoa

Theaceae
- Tea

Rubiaceae
- Coffee

Musaceae
- Banana

Vitaceae
- Grape Raisin

Anacardiaceae
- Pistachio Nut

Oleaceae
- Olive

Convolvulaceae
- Sweet Potato
- Yam

Bromeliaceae
- Pineapple

Zinziberaceae
- Ginger

Ungulatae
- Beef
- Lamb
- Mutton
- Pork
- Veal

Aves
- Chicken
- Duck
- Goose
- Squab
- Turkey

Pisces
- Bass
- Crappie
- Pike
- Whitefish
- Herring
- Halibut
- Haddock
- Salmon

Crustaceae
- Lobster
- Crab
- Shrimp
- Crayfish

Mollusca
- Clam
- Oyster
- Scallop
- Abalone

*Adapted from an arrangement by M Murray Peshkin, M.D New York N Y

TABLE 54

ELIMINATION DIETS FOR THE DIAGNOSIS AND TREATMENT OF FOOD ALLERGY*—VANDERBILT CLINIC DIETS

	Adults				Children			
	Diet 1	Diet 2	Diet 3	Diet 4	Diet 5 For Infants	Diet 6 Children 1-2 Years	Diet 7 School Child	Diet 8 School Child
Beverage	Coffee	Milk Chocolate[d]	Tea Lemonade	Grape juice	Sobee[o]	Sobee Lemonade	Sobee	Lemonade
Fruit	Grapefruit Prunes Plums	Apple Apricots	Peaches Banana Lemon	Grapes Raisins Pears	Grapefruit juice Lemon juice	Lemon juice Banana	Apricots Banana	Apple Lemon
Vegetable	Peas (any kind) Corn (any kind)	Beets Lettuce	Onion Carrots Lentils	Beans (any kind) Turnips (yellow or white)	Carrot String beans	Carrot String beans	Carrot Beans (all kinds)	Corn Beets Peas
Meats	Lamb Mutton	Beef Veal	Mackerel Salmon	Chicken Egg	Lamb	Lamb	Lamb	Beef
Cereal	Corn[a] Hominy	Rice[e] Rye	Wheat[h]	Barley Oatmeal Steel-cut oats	Barley Oatmeal	Barley Oatmeal	Barley Oatmeal	Corn Rice
Bread	Corn pone Corn crisps	Rye-rice muffin Whole rye wafer[f]	Homemade biscuit Whole wheat bread[i] Some wheat crackers[j]	Barley-oatmeal muffin		Barley-oatmeal muffin	Barley-oatmeal muffin	Corn pone Corn crisps
Fat	Corn oil[b]	Beef suet Butter or cream	Cotton seed oil[k]	Olive oil Chicken fat		Olive oil	Olive oil	Corn oil[b]
Miscellaneous	Corn syrup Plum jam Molasses Molasses candy	Vinegar Cheese Apple butter Chocolate fudge Plain milk-chocolate bars[g] Mineral oil	Spaghetti[l] Peach jam Lemon drops	Olives Grape jelly Peppermint or wintergreen cream candy[n]	Corn syrup[c] Corn sugar Viosterol[p]	Viosterol[p]	Chocolate Apricot jam Chocolate candy (homemade)	Corn syrup Molasses Apple butter

Water, cane sugar, brown sugar, powdered dextrose, salt, gelatin[m], baking soda, cream of tartar, hard candy[n] may be used freely on all diets.

Diets 5, 6 and 7 contain practically the same foods but are adapted for different ages. If the mother is unable to bake the prescribed bread substitutes, Ry Krisps[f] may be added.

[a] Corn meal mush or Post Toasties. [b] Corn oil: Mazola, manufactured by the Corn Products Refining Co., is stated to contain only pure corn oil.

[c] Corn syrup: Karo Blue Label, manufactured by Corn Products Refining Co., is stated to be made from 85-90 per cent corn syrup and 10 per cent refiners sugar.

[d] Chocolate: this applies to a pure chocolate or cocoa and does not indicate chocolate preparations such as the cocoa malt or chocolate malted milk preparations.

[e] Rice: preferably brown or as Puffed Rice, Quaker Oats Co., or Rice Krispies, Kellogg's.

[f] Ry Krisps, whole rye wafer, stated to be made from whole rye, salt, and water. Manufactured by the Ralston Purina Co., St. Louis, Mo.

[g] Plain Hershey milk chocolate bars are stated to be made from whole milk, chocolate and sugar. Filled chocolate candy bars or chocolate creams may not be used as they usually contain egg and sometimes nuts or fruits. [h] Wheat breakfast cereals as Farina, Cream of Wheat, Wheatena, Shredded Wheat, Puffed Wheat, etc.

[i] Whole wheat bread as baked by the leading bakers in New York City is stated to be made without milk. It usually contains yeast and frequently lard which introduces additional foods. Practically all New York white bread does contain milk. This may not apply in every community.

[j] Uneeda Biscuits and Graham Crackers of the National Biscuit Co. are stated to be made without milk or eggs.

[k] Cotton seed oil, i.e., Crisco, manufactured by Proctor and Gamble. It may be salted and also used as a very good substitute for butter.

[l] Spaghetti: this does not include macaroni and noodles as some brands of macaroni contain milk and all noodles contain egg.

[m] Commercially prepared lemon flavored gelatin may be used on diets 3, 6 and 8, but on the other diets it is necessary to use unflavored gelatin as the allowed fruit flavors are not prepared commercially.

[n] Hard candy applies to the commercial candy flavored with peppermint, wintergreen, clove, cinnamon, etc., but not to soft candies such as marshmallows, fondants, creams or nougats because egg white is used in the making of these.

[o] Sobee, manufactured by Mead, Johnson & Co., contains soy bean 67.5 per cent, barley flour 9.5 per cent, olive oil 19 per cent, sodium chloride 1.3 per cent and calcium carbonate 2.7 per cent. If it is prepared by using 1 ounce of Sobee to 7 ounces of water the nutritive value of one fluid ounce is approximately equivalent to 17 calories. The percentage composition in normal dilution is carbohydrate 4.07 per cent, protein 4.15 per cent and fat 81 per cent.

[p] Viosterol: irradiated ergosterol usually with corn oil as a vehicle. If corn is contraindicated, suggest using Abbott Viosterol which is irradiated ergosterol in sesame oil.

* Waters, I. N. Reprint from The Journal of Allergy, St. Louis, Vol. II, No. 4, p. 225, May, 1931.

TABLE 5

THE AMOUNTS OF CARBOHYDRATE PROTEIN FAT AND CALORIES FOR THE VARIOUS GRAM RATIOS OF THE KETOGENIC DIET

Diet Calculation Table

Cals	Gram Ratios 1 1		1 5 1		2 1		2 5 1		3 1		3 5 1		4 1	
	F	C P	F	C P	F	C-P	F	C P	F	C-P	F	C-P	F	C P
1000		77	86	57	91	45	94	38	97	32	99	28	100	5
	79	79	88	59	93	47	97	39	99	33	101	29	10	26
	81	81	90	60	96	48	99	40	102	34	104	30	105	26
	83	83	9	61	98	49	101	41	104	35	106	30	10	27
1100	85	85	94	63	100	50	104	41	106	36	108	31	110	2
	87	8	96	64	102	51	106	42	109	36	111	32	112	28
	88	88	99	66	105	5	108	43	111	37	113	32	115	29
	90	90	101	67	107	53	111	44	114	38	116	33	118	29
1 00	9	9	103	69	109	55	113	45	116	39	119	34	120	30
	94	94	105	0	111	56	116	46	118	40	121	34	1	31
	96	96	107	1	114	57	118	47	121	40	123	35	125	31
	98	98	109	3	116	58	120	48	123	41	126	36	127	32
1300	100	100	111	4	118	59	1 3	49	1 6	42	1 8	37	130	3
	10	10	114	6	120	60	12	50	1 9	43	130	37	132	33
	104	104	116	7	122	61	128	51	130	43	133	38	135	34
	106	106	119	8	124	62	130	52	132	44	136	39	138	34
1400	109	109	1 0	80	128	64	132	53	135	45	138	40	140	35
	110	110	123	82	130	65	135	54	139	46	141	40	142	36
	112	11	125	83	132	66	137	55	141	47	143	41	144	36
	113	113	1 6	84	134	67	139	56	143	48	146	42	146	37
1500	115	115	1 9	86	136	68	141	57	144	48	148	42	150	38
	117	117	131	87	138	69	144	58	147	49	150	43	152	38
	119	119	134	89	140	0	146	59	150	50	15	44	156	39
	121	121	135	90	144	72	150	60	153	51	155	44	158	39
1600	123	123	137	91	146	73	151	60	156	5	157	45	160	40
	125	125	140	93	149	74	153	61	158	53	161	46	162	41
	127	12	143	94	150	75	155	62	159	53	163	47	165	41
	1 9	1 9	144	96	15	6	158	63	16	54	165	47	168	4
1 00	131	131	146	97	154	77	160	64	165	55	168	48	1 0	43
	133	133	149	99	156	78	163	65	168	56	170	49	17	43
	135	1 5	150	100	158	79	165	66	170	57	17	49	176	44
	13	137	152	101	162	81	168	67	1 1	57	1 3	50	178	44
1 00	138	139	155	103	164	8	1 0	68	174	58	177	51	180	45
	140	140	156	104	166	83	173	69	177	59	179	51	19	45
	14	142	158	105	168	84	1 5	0	179	60	18	2	195	46
	144	144	161	107	170	85	178	71	180	60	185	53	184	47
19 0	146	145	16	109	172	86	180	72	183	61	187	54	190	48
	148	148	165	110	176	88	183	73	186	6	189	54	19	48
	150	150	167	111	178	89	185	74	189	63	19	55	193	49
	152	152	168	112	180	90	188	75	19	64	195	56	197	49
2000	154	154	1 1	114	18	91	190	76	195	65	197	56	00	50
	156	156	173	116	184	9	191	76	198	65	00	57	0	51
	158	158	1 6	117	186	93	193	77	198	66	0	58	05	51
	160	160	178	118	189	94	196	78	01	67	04	58	207	5
100	16	16	180	120	191	95	198	9	03	68	207	59	10	5
	163	163	18	121	193	97	200	80	06	69	10	60	212	53
	165	165	184	123	196	98	03	81	08	69	1	61	215	54
	167	167	186	124	198	99	05	8	210	0	214	61	217	54
0	169	169	189	126	00	100	207	83	13	71	17	6	20	55
	1 1	171	191	1 7	0	101	10	84	15	7	0	63		6
	1 3	1 3	193	1 9	204	10	212	85	219	73		63	2 3	6
	1 5	175	195	130	07	103	214	86	0	73	2 4	64	2	5
0	1 7	1 7	197	131	09	105	217	87		74	2 7	65	30	57
	1 9	1 9	1 9	133	21	106	219	88	2 5	75	9	66	23	58
	181	181		134	14	107		89	9	76	23	66	33	9
	18	18	04	136	16	108	4	90	30	77	234	6	237	59
0	185	185	06	137	18	109	6	91	3	77	36	68	240	60
	186	186	08	139	2 0	110	9	9	235	78	39	68	1	61
	188	188	10	140		111	31	93	37	79	4	69	43	61
	190	190	1	141	5	11	33	94	40	80	44	0	47	6
00	192	19	14	143	8	114	236	95	4	81	46	0	0	6
00	00	00		148	5	118	24	99	43	83	3	73	0	65
00	05	08	31	1 4	44	1	5	101	61	87	5	75	3	6
500	1	15	49	160	54	1 7		105	0	90	3	78	20	9
900	3	3	47	16		131		109	9	93	3	81	3	
3 00	31	31	3	1 0	4	13		113	91	7	94	84	300	5
100	8	38	65	1	2 9	140		117	3 0	100	304	87	313	7
0	46	46	3	1	40	145	0	1 0	3 3	103	314	90	3 0	80
300	54	54	5	1 5	300	153	319	1 4	318	1 5	3	9	3 3	8
00	1	61	91	194	308	154	3 0	1 8	3 7	109	3	95	343	85
3 00	69	69	309	00	318	1 9	33	13	335	11	343	98	345	87

E H Luth r and W M B rtl tt M h us tts Ge ral H sp tal

The figures f r Ca bohyd t Prote n and Fat e g e in grams The p t n is based on th nd duals prote n requ ement—1 to 1 g m pe k l gram of body w ght The number f cal r es requ red s l e ted on the t e and the d dr t oses ected to fu n h th s numbe of c l s Th am t of prote th n deduc ted f m th figures given in the column m rked CP The rema nd r represents the mou t of ca bohydr te wh ch w ll be requ red to g e the de ed rat o

TABLE 56

FOOD CONTENT OF DIETS MODIFIED ACCORDING TO CONSISTENCY†

Restricted Liquid	Full Liquid	Soft	Light
Beef juice	All foods on restricted liquid diet—plus	All foods on full liquid diet—plus	All foods on soft diet—plus
Broth—fat free	Cereal gruels	Bread—white	Breads
Cereal water	Cream	Milk toast	Cakes, plain
Coffee (no milk or cream)	Egg beverages	Toasted	Cereals
Fruit ices	Egg lemonade	Butter	Cheese
Fruit juices (bland)	Eggnog	Cake	American
Ginger ale and other carbonated beverages	Gelatin desserts (clear)	Angel	Cream
Kaffee Hag	Ice cream—no fruit or nuts	Sponge	Cookies, plain
Postum	Junket	Cereals, cooked	Eggs—any way except fried
Sanka	Milk	Refined	*Fish
Tea	Milk beverages	Whole grain	Minced, baked or steamed
Toast water	Chocolate	Finely ground	Fruits
Vegetable juices—strained	Cocoa	Strained	Mayonnaise
Water	Malted milk	Cheese, cottage	Meats (except beef, mutton, pork and veal)
	Milkshakes	Crackers, white	Bacon
	Sherbets	Eggs, soft cooked	Brains
	Soft custards	Fruits (free from skin and seed)	*Chicken (tender) minced, stewed, roasted
	Soups—strained	Pulp,	Lamb chops
	Cream	Grapefruit	Poultry
	Vegetable	Orange	*Scraped beef
		Soft cooked (baked or canned, as)	*Sweet breads
		Apples	Olives
		Apricots	*Oysters
		Bananas	Soups
		Peaches	Vegetables (cooked and raw)
		Pears	Except the cabbage family, corn, dried beans, cucumbers onions, radishes and turnips
		Prunes	
		Fruit jellies	
		Fruit whips	
		Jellies	
		Macaroni	
		Noodles	
		Potato—baked creamed, mashed	
		Puddings (no nuts or raisins)	
		Bread	
		Cornstarch	
		Custard	
		Tapioca	
		Rice	
		Spaghetti	
		Vegetables, puréed,	
		Asparagus	
		Beans, string	
		Carrots	
		Peas	
		Spinach	
		Squash	
		Tomatoes	

* Permitted by some physicians on the soft diet
† Adapted from a committee report of the Diet Therapy Section of the A D A, 1930-32
J A D A, Vol IX No 1, May 1933

TABLE 57

FIGURES FOR THE CONSTRUCTION OF NORMAL AND DIABETIC DIETS FOR ADULTS

	Grams per Kilo Body Wt per day			Total Grams Average Weight 70 Kilos			Calories (Moderate activity)	
	C	P	F	C	P	F	Total	Per Kilo Body Wt per day
NORMAL DIET	4-6	1-1 5	1-2	280-420	70-105	70-140	2800-3150	40-45
	Grams per Kilo Body Wt per day			Total Grams Average weight 70 Kilos			Calories	
	C	P	F	C	P	F	Total	Per Kilo Body Wt per day
DIABETIC DIETS								
Overweight	1 4-2 1	1 0-1 2	0 5-1 0	100-150	70-85	35-70	1000-1600	14-22
Average weight	2 1-2 8	1 2-1 5	1 0-1 6	150-200	85-105	70-110	1600-2200	22-31
Underweight	2 8-3 6	1 5-1 5	1 6-2 1	200-250	105-105	110-150	2200-2800	31-40

The amount of the food constituents may be modified within the range of the figures given to meet the needs of the patient—such as various grades of activity and associated diseases or ab normal conditions

When insulin is not used the amounts of carbohydrate may be lowered and the amounts of fat increased to obtain the same caloric value

* As a general rule no less than 100 grams of carbohydrate are prescribed in these diets

** As a general rule no less than 1000 calories are prescribed in these diets

Amounts of minerals and vitamins are the same as for the normal diet unless there are other requirements *for associated diseases or abnormal conditions If sufficient amounts of minerals* and vitamins are not supplied by food medication should be prescribed

Total calories are given in rounded numbers To estimate total calories multiply the grams of carbohydrate and the grams of protein by 4 and the grams of fat by 9 and total the results

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Diet for Children For normal growth and development children require a normal diet with sufficient insulin to utilize it but concentrated carbohydrates are excluded

NOTES FOR DIETS

PART III

DIETARY OUTLINES

FOREWORD

In the following part, a chart and a series of dietary outlines present in a brief and comprehensive form the principles that have been discussed in the text, so that the complete dietetic treatment for a disease can be seen without referring to the text

The chart states for each disease the body part affected, its normal function, the pathological physiology or abnormal condition present, and other considerations that enter into effective treatment It restates the normal requirements of the food constituents, as given in the text Also it indicates for each therapeutic diet whether the requirements, with respect to food constituents, calories and consistency of foods, remain normal (N) or need to be increased (+) or decreased (−) For example,—in reading down the column for protein under the heading "Per kilogram of body weight," it will be seen that only in certain kidney and liver disorders is a change indicated from the normal protein Again, looking down the columns for the minerals, calcium, phosphorus, and iron, it will be seen that the requirements remain normal (N) except for some diseases in which the skeletal structure is affected or for the needs of the fetus In reading across the page it will be seen that for many diseases there is no modification from the normal requirement of any of the food constituents

This is the value of the table —that to one who knows the normal requirements of the food constituents, and has an understanding of a particular disease or abnormal condition, a glance will show what modification of the normal diet, if any, is necessary in the case of a particular dysfunction of a body part

The dietary outlines that follow are constructed in conformity with the plan of the table, carrying the same headings and statements under each disease, but developing in greater detail the dietetic treatment that is indicated in the table

The description of the diseases concerned in these outlines presents only certain fundamental facts that are pertinent to dietetic treatment, so that the principles underlying diet therapy will stand forth clearly in relation to medical findings and treatment No attempt has been made to give complete medical data This will already have been acquired or will need to be secured from other sources

Each dietary outline includes a brief review of the environmental factors that influence the effectiveness of the diet, and suggestions relative to the education of the patient For a more detailed discussion, reference may be made to the text (Chapters 4, 5, 6)

When the diagnosis is established the physician will consider the aid to be obtained from diet therapy Seldom, however, is there but one disease to be treated The food prescription must often consider an associated condition, sometimes more than one A dietary planned to help to compensate for only one condition may be harmful to another and may need adjustment to meet the requirements of various diseases In view of such a possibility there have been listed, alpha

FOOD CONSTITUENTS NEEDED PFR DAY FOR THE NORMAL DIET AND THEIR VARIATION IN THERAPEUTIC DIETS

Body Conditions	Body Parts Affected	Physiology	Pathological Physiology and Abnormal Conditions	Food Constituents per Day: Grams per Kilogram Body weight				Grams		Milli grams	I U	Micro grams		Milli grams		I U		Other Factors Contributing to Effective *Dietetic Treatment*
				Carbo-hydrate	Protein	Fat	Calories	Calcium	Phos-phorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Vitamin D	Consistency Fiber	
Child Normal	Entire body	The maintenance of *health and the keeping* of all body parts and functions in normal condition		6 *to* 10	2 *to* 3	2 *to* 3			**	*	*	*	*	**	**	**	N	
Adult Normal (male and female)				4 to 6	¾ to 1 5	1 to 2	*	8	1 32	12	5000	m 1800 f 1500	m 2700 f 2?00	m 18 f 15	m 75 f 0	**	N	
Food Allergy		Foods are usually assimilated and used by body without showing sensitivity to any food	Hypersensitivity in body cells due to certain foods, probably a protein specific to that food	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Exclusion of foods to which patient is allergic Medication may be necessary to make diet adequate
Constipation Atonic	Large intestine	Formation and excretion of the feces which contain indigestible food residue unabsorbed digestive secretions and bacteria	A functional type of constipation lack of muscle tone Redundant colon may be present	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Establishment of good habits of personal hygiene mental and physical Regulation of bowel movement adjusted to daily routine Cathartics only on prescription of physician
Constipation Spastic			Hyperirritability due to cathartics coarse food or emotional influences Alternating spasm and atony or a combination	N	N	N	N	N	N	N	N	N	N	N	N	N	—	
Colitis			Changes in secretion and motility destructive ulcerating lesions involving the entire colon with marked spasm and thickening of intestinal wall	N	N	N	N	N	N	N	N	N	N	N	N	N	—	
Ulcer	Stomach or duodenum	Stomach softening and breaking of food by mechanical action and digestion of protein by pepsin and hydrochloric acid Duodenum digestion of carbohydrate protein and fat	Ulceration to varying depths associated with inflammation of the surrounding mucosa, occasionally with hemorrhage or perforation Hydrochloric acid usually in excess Achlorhydria may occur Change in motility with or without spasm	N	N	+	N	N	N	N	N	N	N	N	N	N	—	Frequent and regular feedings Exclusion of foods that stimulate gastric secretion and are either chemically, mechanically or thermally irritating Establishment of good habits of personal hygiene physical and mental

Underweight	Body tissue	Normal storage of body tissue to meet the standard of average weight for growth development and maintenance of normal body functioning	Deficiency of food, especially protein. Deficient absorption of food. Loss of appetite often of emotional origin	+	N	+	+	N	N	N	N	N	N	N	N	N	N	Establishment of good habits of personal hygiene, mental and physical. Correction of physical defects. Sufficient rest and sleep
Obesity	Adipose tissue		Excessive deposition of fat, due to immoderate food intake, lack of sufficient physical activity or both; *in many cases abnormalities in metabolism in certain types*	−	N	−	−	N	N	N	N	N	N	N	N	N	N	Establishment of good habits of personal hygiene mental and physical. Glandular treatment only under *direction of physician*
Diabetes Adult	Islands of Langerhans of the pancreas	Secretions of a *hormone* insulin which is of importance to metabolism of glucose and fat	*Deficiency* of insulin secretion by Islands of Langerhans causing deficient glycogen storage and deficient glucose oxidation	−	N	N	−	N	N	N	N	N	N	N	N	N	N	Administration of Insulin *for satisfactory control* of the condition. Calories sufficient to maintain desired weight
Child				N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Liver Disorder Chronic	Liver	The intermediary metabolism of various *food* constituents. Formation and secretion of bile. Excretion into the bile of the disintegration of hemoglobin. The detoxification of harmful products of ingestion and protein metabolism	Disturbance of one or several of the functions as a result of degenerative and inflammatory changes in the cells, alterations in the circulatory system, infections (chronic and acute), toxic processes, disorders affected by diseases of the biliary tract and tumors benign and malignant	+	+	−	N	N	N	N	+	+	+	+	N	N	Low N	The diet should be bland, non irritating, and non stimulating. Medication may be necessary to make the diet adequate in minerals and vitamins. Feedings between meals to fulfill the high carbohydrate requirement. Establishment of good habits of personal hygiene, physical and mental
Liver Disorder Acute				+	N	−	−	N	N	N	+	+	+	+	N	N	Low N	
Epilepsy (in children) Ketogenic Diet	Not determined	Not known	Convulsive seizures the *physiological cause* of which is unknown — Talbot	−	N	+	N	N	N	N	N	N	N	N	N	N	N	Calcium iron and vitamins to make diet adequate
Nephritis	[illegible]	*Excretion of the end* products of protein metabolism. Regulation of acid base balance and fluid	*Inability* of kidneys to excrete water and end products of protein metabolism which accumulate in blood	N	− to N	N	N	N	N	N	N	N	N	N	N	N	N	In edema restriction of sodium *chloride and fluid* or increase of the acidity of the diet according to different authorities
Nephrosis			Marked loss of albumin in urine. Plasma protein below 5.5 per cent results in edema	N	+	−	N	N	N	N	N	N	N	N	N	N	N	
Pregnancy	Maternal and fetal tissue	Normal functioning of the maternal organism adjusted to the demands of the developing fetus	Increased demands on maternal metabolism by presence of fetus	N	N	N	N	1 5	2 0	15	6000	1800	500	13	100	400-800	N	Calories based on the desired body weight. Decrease of protein if there are any kidney complications
Rickets	Skeletal structure	Adequate utilization of calcium. Proper bone formation and proper functioning of the central nervous system	Various disturbances of bone formation and calcification and of proper functioning of the central nervous system	N	N	N	N	N	N	N	N	N	N	N	N	+	N	Administration of fish liver, liver oil, sunshine as medication
Other Bone Deformities				N	N	N	N	+	+	N	N	N	N	N	N	+	N	

Key: N = Normal − = Decrease + = Increase
See Tables 11 12 and 13
See Table 2

Generally, at the end of each outline, abnormal or pathological conditions that may occur, one or several of them, in association with the disease.

The intention of the repetition of statements in the outlines is that under each disease shall be found complete data for the diet.

The dietary outline for pregnancy will serve to illustrate the use of this material. With the preliminary statement of the conditions that indicate body changes, the normal food requirements will come to mind automatically, or they can be reviewed in the first outline—that for the Normal Diet. The directions for dietetic treatment follow, with a statement of the necessary variations from the normal in food constituents to meet the body changes (in this case an increase of minerals and vitamins) and a brief review of the foods (milk, fruits, and vegetables) that will make valuable contributions of minerals and vitamins. To supplement the statement of the required amounts of the food constituents,—for example, 1 5 grams of calcium—reference to the Tables of Food Values and Measures will guide the choice of food to satisfy these requirements. Further help will be gained from the tables listing foods equivalent in calcium, phosphorus, iron and the vitamins (Tables 29 to 45), as well as the tables listing fruits and vegetables according to their content of minerals (Tables 28, 31, 34) and those giving various combinations that will supply the day's requirement (Tables 30, 33, 36). Likewise when the protein needs to be reduced, as in certain kidney complications, or the calories, for reduction of weight, help will be gained from the tables that give the protein, carbohydrate and fat contents of the foods in terms of their equivalent values (Tables 21, 24, 25, 27).

As research in the fields of both medicine and nutrition adds new knowledge, adjustments will doubtless need to be made in diet therapy. But the principle underlying diet construction will remain steadfast: the diet must supply food in kinds and amounts to fulfill body n[eeds] in health and disease.

THE NORMAL DIET

Dietary Outline

Body part affected The whole body

Physiology The maintenance of all body parts and functions in normal condition [1]

Medical examination The condition of the body is checked by a complete medical examination including

Comparison of present weight with the average weight

Determination of blood pressure pulse temperature examination of head heart lungs abdomen and extremities

Laboratory data Laboratory studies of blood and urine

Dietetic treatment Foods to supply the food constituents in amounts adequate for the protection of health

The food constituents

Carbohydrate

Amount

Adult 4–6 grams per kilogram average body [weight]

Child 6–10 grams per kilogram average body [weight]

Qualifying factor ... should be sufficient ca[lories] ...

[1] "Health—Soundne[ss] ... that condition of a ... al bowel and functions which co[nstitute] ... ent and prolonged ... of its Century Dictionary a[nd] ... *Chemistry of* ... dily c... Macmillan Co , 1932 ... n 4th

Amount

Adult ¾-1½ grams per kilogram average body weight

Child 2-3 grams per kilogram average body weight

Qualifying factor 50 per cent of the minimum requirement should be complete protein

Fat

Amount

Adult 1-2 grams per kilogram average body weight

Child 2-3 grams per kilogram average body weight

Qualifying factor There should be adequate amounts of the fats that carry the fat soluble vitamins

Minerals

Amount

Adult Calcium—.8 gram per day

Phosphorus—1.32 grams per day

Iron—12 milligrams per day

	Calcium	Phosphorus	Iron
	Grams per Day	Grams per Day	Milligrams per Day
Adults	0.8	1.32	12
Children			
Under 1 year	1.0	1.0	6
1-3 years	1.0	1.0	7
4-6 years	1.0	1.0	8
7-9 years	1.0	1.0	10
10-12 years	1.0	1.2	12
Girls			
13-15 years	1.3	1.2	15
16-20 years	1.0	1.2	15
Boys			
13-15 years	1.4	1.32	15
16-20 years	1.4	1.32	15

Qualifying factor The foods that supply adequate amounts of these minerals usually carry other necessary minerals

Vitamins

Amount

	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Vitamin D
	International Units	Micrograms	Micrograms	Milligrams	Milligrams	International Units
Adults Moderate activity						
Man	5000	1800	2700	18	75	
Woman	5000	1500	2200	15	70	
Children						
Under 1 year	1500	400	600	4	30	400-800
1-3 years	2000	600	900	6	35	
4-6 years	2500	800	1200	8	50	
7-9 years	3500	1000	1500	10	60	
10-12 years	4500	1200	1800	12	75	
Girls						
13-15 years	5000	1400	2000	14	80	
16-20 years	5000	1200	1800	12	80	
Boys						
13-15 years	5000	1600	2400	16	90	
16-20 years	6000	2000	3000	20	100	

The amount of Vitamin D needed has not been determined for adults and older children but should be provided up to the minimum amount recommended for infants

Qualifying factor These amounts are supplied by the foods of the protective die

Fluid

Amount

Adult Equivalent to 6–8 glasses of water per day

Child Equivalent to 3–4 glasses of water in addition to milk per day

Qualifying factor Foods as well as beverages supply fluid

Foods

Milk 1 quart daily for the child 1 pint daily for the adult

Milk provides liberally protein containing all the essential amino acids carbohydrate is readily utilized and fat that is especially valuable as a carrier of vitamin A Its tinctive contribution is calcium, one quart per day supplying in full, the calcium requi ment of the child It provides liberal amounts of phosphorus, and its content of iro though low proportionately is of excellent quality Ascorbic acid is present in raw mil to a limited degree and is not entirely destroyed by pasteurization The small amoun of vitamin D in milk can be greatly increased by various methods Milk adds t the thiamine content of the diet and is an excellent, almost necessary source of ribo flavin and a good source of niacin Its contribution of these many food constituents gives milk a preeminent place in a protective diet

Protein foods At least 60 to 105 grams of protein per day *

Each of these foods supplies about 7 grams of protein

Complete Protein	*Incomplete Protein*
1 ounce meat	½ cup dried beans peas lentils (cooked)
1 egg	2 large potatoes
1½ ounces fish	1 cereal dish cereal
1 glass milk	2½ slices bread
1 ounce cheese	1 ounce nuts
1½ tablespoons soy beans, dried	

An ounce of American cheese contains approximately the same amount of calcium and phosphorus as 1 cup of milk cream cheese only half as much, and cottage cheese almost no calcium Cheese is also a good source of protein fat and the vitamins

Meat and eggs supply protein of excellent quality, phosphorus and iron thiamine riboflavin and niacin The glandular organs and eggs are also sources of vitamin A Liver and egg yolk contribute vitamin D but in small amounts Fish supplies protein phosphorus and some thiamine riboflavin and niacin Legumes contribute carbohydrate as well as calcium iron, thiamine riboflavin and niacin The protein of legumes lacks certain essential amino acids but these can be supplied by supplementing the legumes with foods containing complete protein

Butter and fats 9 teaspoons of fat per day including butter fortified oleomargarine and other kinds of fat

Fats provide energy Butter fortified oleomargarine and cream contribute also the fat soluble vitamin A Fish oils furnish fat soluble vitamins A and D in liberal amounts and for this reason are used for medication The vegetable fats unless fortified and the oils supply only energy

Vegetables and Fruits At least two servings of vegetables every day For safety use a green or yellow vegetable to ensure vitamin A Potato in addition to other vegetables if desired At least 2 servings of fruit every day For safety use a citrus fruit daily to ensure ascorbic acid

Vegetables and fruits are important sources of minerals and vitamins They vary in their content of these food constituents both as to kinds and amounts as will be seen on reference to the Tables The leafy and the yellow vegetables are especially good sources of vitamin A the seed vegetables containing the embryo of thiamine and the citrus fruits and vegetables that are eaten uncooked of ascorbic acid The canned vegetables cooked under mechanical processes also retain the greater part of their ascorbic acid content

* At least half the amount of protein must be complete protein

Both vegetables and fruits are desirable sources of carbohydrate contained in varying amounts, and good sources of cellulose They add to the alkaline reserve of the body The organic acids of fruit aid bowel elimination Dried fruits are of high energy value because of their concentration of sugar and contribute also vitamins and minerals

Bread cereals flour and flour products Use 8 or more servings per day

The cereal products (as well as the potato) are the main sources of carbohydrate for most people They contain some protein al o but of a type lacking the essential amino acids—a deficiency which can be made up by combining the cereals with milk or another food containing complete protein The refined cereal product contributes little else than carbohydrate and a small amount of protein but the whole grain or restored or enriched product supplies minerals—iron in particular—thiamine, riboflavin and niacin

Sugar or sweets Not more than ¼ pound a week of sugar Other sweets as desired

Sugar and some other concentrated sweets such as jellies honey and most kinds of candy contribute little besides carbohydrate They are pleasing to the taste, but before satisfying the palate with these ' one sided foods ' sufficient amounts of other foods should be given to fulfill the protein mineral and vitamin needs of the body Dried fruits furnish also vitamins and minerals and molasses is a good source of calcium and an excellent source of iron and these foods can be made into attractive candies

Coffee and tea should not be allowed to displace essential foods Without cream or sugar they have no food value

Meals

The number of meals should follow the established routine of the patient provided the food intake is adequate in quantity and quality to fulfill the body's needs It may be desirable that the younger children especially and some adults as well should have three small meals with intermediate feedings For all children the evening meal should be light

Environmental factors that influence the effectiveness of the diet

Effective dietetic treatment requires conditions of living favorable to the practice of good habits of personal hygiene both physical and mental Regular habits of sleep rest and activity and regularity of bowel elimination are essential Matters pertaining to income the occupation the necessaries of life and to racial and religious customs exert an important influence on the carrying out of the diet

Education of the patient

To carry out his diet intelligently the patient should understand the relation of food to the body, and he should know the kinds and amounts of food that will fulfill his needs for growth and health He should know the equivalent values of foods to be able to adapt his diet to tastes desires habits income and other environmental conditions and at the same time fulfill his food requirements He will acquire this knowledge the more surely through methods of visual education

FOOD ALLERGY

Dietary Outline

Body part affected Skin and mucous membrane especially of the respiratory and gastro intestinal tract

Physiology Foods are assimilated and used normally without evidence of sensitivity on the part of the body toward any particular food or foods

Pathological physiology Hypersensitivity of the body cells to certain foods (i e to a protein that is specific to the food)

Usually a familial tendency to food sensitiveness symptoms often varying in different members of the family

Contributing factors Climate season sunshine, moisture heat cold
Dust smoke fumes air conditions
Clothing furs feathers emanations and substances from plants and animals toilet accessories antiseptics and detergents tobacco
Neighborhood school occupation recreation
Household furniture and furnishings
Emotional disturbances
Infections

Laboratory data Routine urine and blood studies as required in a complete medical examination

Radiographs to rule out other respiratory and gastrointestinal conditions that may produce the same symptoms that arise in food allergy

Tests for diagnosis Various types of tests (skin and mucous membrane) made with the protein extracts of the commonly used foods

Elimination diets

Dietetic Treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain the desired weight Treatment may include one or more of the following procedures, depending upon the practice of the physician complete elimination of the foods to which skin tests show the patient to be allergic, routine restriction, without tests of foods that commonly give rise to unfavorable symptoms, omission of foods that belong to the same biologic group as the food to which the patient is found to be allergic, use of the elimination diet the choice of foods being guided by the results obtained, avoidance of foods that are significant causes of symptoms as indicated by the patient's history When the foods allowed cannot supply adequate amounts of the food constituents it will be necessary to supplement the diet by medication Care should be taken that the medication does not contain a substance to which the patient is allergic

The Food Constituents

Carbohydrate

Amount Normal

Qualifying factor An excess amount of concentrated sweets may produce fermentation in the gastrointestinal tract and should be avoided

Protein

Amount Normal

Qualifying factor If the patient is sensitive to many of the foods containing complete protein liberal amounts of the foods that are allowed are given to insure the adequacy of the diet

Fat

Amount Normal

Qualifying factor Easily digested fats of low melting point should be chosen

Minerals

Amount Normal

Qualifying factor When foods that would supply the mineral requirement have to be omitted medication must be prescribed

Vitamins

Amount Normal

Qualifying factor If amounts supplied by food are inadequate medication should be prescribed Care should be taken that the patient is not allergic to the foods chosen for their high vitamin content

Foods

A Foods to which the patient is sensitive are determined by skin tests or trial food tests and by the personal history of food sensitiveness They must be entirely eliminated until the patient has been symptom free for a satisfactory period The foods may then be re introduced into the diet, one at a time, and in very small amounts until it becomes clear in what amounts if any, they can be tolerated

B Foods that are to be restricted without tests according to various authorities

Very hot and very cold foods
Condiments and spices and richly spiced foods
Concentrated sweets candy, jam jelly
Fried foods, pastries and hot breads
Various kinds of fish especially shell fish the oyster excepted
Certain kinds of meat turkey veal, pork ham bacon liver and other organs
Highly flavored cheeses
Vegetables and fruits that form gas
Nuts
Cocoa and chocolate

C Foods for the diet

Milk is one of the foods to which many people are sensitive If it must be eliminated special thought must be given to the adequacy of the diet in particular with respect to the growing child In such case the calcium, phosphorus and vitamins supplied by the diet may have to be supplemented by the use of other foods which are good sources of these food constituents, or by medication Frequently the patient who is sensitive to milk is found to tolerate it when it is rendered hypoallergic through heating processes as in the case of boiled, evaporated or dried milk Milk from animals other than the cow may be substituted if the tests are negative Cheese if tolerated helps greatly to fulfill the requirements for calcium and phosphorus Proprietary foods are offered as milk substitutes but cannot be used when they contain any of the foods forbidden to the patient

Meat fish and poultry of the kinds allowed should be carefully evaluated and given in amounts needed to make an adequate contribution to the diet

Eggs a valuable source of many food constituents, are common offenders When they have to be excluded from the diet careful thought must be given to the selection of foods equivalent in food value Medication may have to be prescribed

Fats Usually butter is tolerated but if not, the fat must be supplied by other foods and care must be taken to secure sufficient vitamin A from food or by medication Heavy cream which may be diluted if desired is often tolerated even though the patient is sensitive to milk Only easily digested fats of low melting point should be used The oils and fats derived from foods to which the patient is sensitive should not be used in any way

Vegetables and fruits Various vegetables and fruits may have to be eliminated Liberal amounts of those that are allowed especially the seed vegetables should be given to ensure sufficient minerals and vitamins and to increase the carbohydrate content of the diet The soybean and its various preparations are excellent *sources of protein and fat minerals and vitamins They sometimes are used as* substitutes for meat milk and egg in the diet When oranges and tomatoes are eliminated special care must be taken to ensure adequate amounts of ascorbic acid by the use of other foods or by medication

Breads and cereals The grains—wheat oats rye rice corn barley and buckwheat—are common offenders Wheat is the only cereal flour that makes a good raised bread Breads made from other cereal flours are not so palatable and are not eaten so freely When wheat is not allowed therefore care must be taken to see that sufficient amounts of minerals and vitamins are supplied from other food sources or by medication

Sugar and concentrated sweets such as candy jam and jelly, should not be allowed in large amounts as they tend to produce fermentation in the gastro intestinal tract

Nuts may not be found by any of the tests to be the cause of food allergy but they may provoke irritation with coughing

Meals

The number of meals should follow the established routine of the patient The food should be so distributed that there will be no excess at any meal It is advisable especially for children to have the main meal at noon time If the adult desires food at bedtime only a small amount of food that is digestible and of a kind allowed by the diet should be taken

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene both physical and mental should be established

If many of the commonly used and less expensive foods are eliminated foods may have to be prescribed that will necessarily increase the cost of the diet

Medication should be taken only under the direction of a physician If the patient is sensitive to such substances as animal emanations he should avoid contact with them If pollens from trees or grasses affect him unfavorably he should be desensitized to them

Laboratory data Routine urine and blood studies as required in a complete medical examination

Radiographs to rule out other respiratory and gastrointestinal conditions that may produce the same symptoms that arise in food allergy

Tests for diagnosis Various types of tests (skin and mucous membrane) made with the protein extracts of the commonly used foods

Elimination diets

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The Food Constituents

Carbohydrate

Amount Normal

Qualifying factor An excess amount of concentrated sweets may produce fermentation in the gastrointestinal tract and should be avoided

Protein

Amount Normal

Qualifying factor If the patient is sensitive to many of the foods containing complete protein liberal amounts of the foods that are allowed are given to insure the adequacy of the diet

Fat

Amount Normal

Qualifying factor Easily digested fats of low melting point should be chosen

Minerals

Amount Normal

Qualifying factor When foods that would supply the mineral requirement have to be omitted, medication must be prescribed

Vitamins

Amount Normal

Qualifying factor If amounts supplied by food are inadequate, medication should be prescribed Care should be taken that the patient is not allergic to the foods chosen for their high vitamin content

Foods

A Foods to which the patient is sensitive are determined by skin tests or trial food tests, and by the personal history of food sensitiveness They must be entirely eliminated until the patient has been symptom free for a satisfactory period The foods may then be re introduced into the diet one at a time, and in very small amounts, until it becomes clear in what amounts if any they can be tolerated

B Foods that are to be restricted, without tests according to various authorities

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Condiments and spices and richly spiced foods
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Fried foods pastries and hot breads
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Fat

Amount Normal

Qualifying factor Easily digested fats of low melting point should be chosen

Minerals

Amount Normal

Qualifying factor When foods that would supply the mineral requirement have to be omitted, medication must be prescribed

Vitamins

Amount Normal

Qualifying factor If amounts supplied by food are inadequate medication should be prescribed Care should be taken that the patient is not allergic to the foods chosen for their high vitamin content

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Various kinds of fish especially shell fish, the oyster excepted

Certain kinds of meat turkey veal pork ham, bacon liver and other organs

Highly flavored cheeses

Vegetables and fruits that form gas

Nuts

Cocoa and chocolate

Contributing factors Faulty food habits
- Insufficient fluid intake
- Insufficient food intake in either kind or amount or in both
- Insufficient activity
- Type of occupation
- Unfavorable environment
  - Inadequate toilet facilities
  - Sense of hurry
- Body fatigue
- Poor posture
- Excessive use of cathartics
- Emotional strain

Laboratory data Routine urine and blood studies as required in a complete medical examination

Radiographs of the intestine are desirable to determine the type of constipation to rule out organic obstruction and to confirm diagnosis

Examination of feces

Dietetic treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain desired weight The diet should include sufficient water, and sufficient but not excessive bulk, to help to restore the normal muscle tone of the intestine and the regular bowel elimination

The food constituents

Carbohydrate

Amount Normal

Qualifying factor Sufficient but not excessive bulk or cellulose should be provided to stimulate elimination

Protein

Amount Normal

Fat

Amount Normal

Qualifying factor Unabsorbable inorganic oil is used as an intestinal lubricant Excessive use of mineral oil should be avoided however, as it interferes with the absorption of carotene

Minerals

Amount Normal

Vitamins

Amount Normal

Qualifying factor There should be liberal amounts of foods containing thiamine to promote the tonicity of the digestive tract Medication is prescribed when needed to increase the thiamine content

Fluid

Amount Normal 6 to 8 glasses daily

Qualifying factor Foods as well as beverages supply fluid

Foods

Milk adds to the thiamine content of the diet It is also a good source of other vitamins and of protein calcium and phosphorus carbohydrate and fat

Meat fish poultry and egg provide efficient protein and varying amounts of minerals and vitamins The glandular organs fish roe and eggs add to the thiamine content of the diet

Butter fortified oleomargarine and cream provide vitamin A besides adding to the fat content of the diet Vegetable oils and fats that have not been fortified are lacking in vitamin A

Vegetables and fruits also contribute thiamine and their cellulose and organic acids have laxative properties They tend to form gas and act as a slight stimulant by breaking up hard masses in the intestine They supply other vitamins as well as minerals and carbohydrate in varying amounts Three to four servings of vegetables and two to three servings of fruit should be taken daily for the necessary cellulose

The nutritional history of the patient is of great importance in revealing factors emotional and environmental as well as clinical, that are direct causes of, or *predisposing to*, symptoms

Education of the patient

The patient should learn the meaning of food allergy and its relation to his condition He should understand that strict adherence to the diet is necessary to evaluate the effectiveness of the diet He should learn that by taking larger amounts of the foods that he can tolerate and by including in his diet foods with which he may be unfamiliar or *unaccustomed but which are allowed, he can help to fulfill* his requirements of food constituents and calories

In addition to verbal instruction he should be given printed material to take home This should include

- Lists of foods that he is *not* to eat, including the "hidden" foods,—those containing even minute amounts of a forbidden food that is not visible or revealed by taste or descriptive name
- *Lists of foods that he can eat (including only the foods to which he is not sensitive)* with the amounts necessary to fulfill normal food requirements
- Lists of equivalents within the food groups allowed, to help him to vary his meals
- Recipes which contain only foods that are allowed,—for example, recipes for bread that contain only the cereals allowed

All of these instructions must be adapted to the intelligence of the patient

Abnormal conditions and diseases that may be found in association with food allergy

- Acne
- Angioneurotic edema
- Bronchial asthma
- Certain rheumatic conditions
- Constipation
- Eczema
- Gastrointestinal disturbances
- Hay fever
- Migraine
- Nasal obstructions
- Pruritis
- Purpura
- Sinus conditions
- Skin eruptions
- Upper respiratory *infections*
- Urticaria
- Vasomotor rhinitis

ATONIC CONSTIPATION

Dietary Outline

Body part affected The gastrointestinal tract particularly the colon

Physiology Formation of feces that are soft but firm in consistency and which contain undigested residue of food unabsorbed secretions, water and bacteria elimination of feces, sufficient in quantity and at regular frequency—daily or at least every forty-eight hours Absorption of water

Abnormal conditions Regular action of the bowels is deranged

- Irregularity infrequency and difficulty of defecation
- Stools insufficient in quantity
- Stools abnormally hard and dry
- Lack of muscle tone of the intestine
- Redundant colon sometimes present

Contributing factors Faulty food habits
Insufficient fluid intake
Insufficient food intake in either kind or amount or in both
Insufficient activity
Type of occupation
Unfavorable environment
Inadequate toilet facilities
Sense of hurry
Body fatigue
Poor posture
Excessive use of cathartics
Emotional strain

Laboratory data Routine urine and blood studies as required in a complete medical examination
Radiographs of the intestine are desirable to determine the type of constipation, to rule out organic obstruction and to confirm diagnosis
Examination of feces

Dietetic treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain desired weight The diet should include sufficient water and sufficient but not excessive bulk to help to restore the normal muscle tone of the intestine and the regular bowel elimination

The food constituents

Carbohydrate

Amount Normal
Qualifying factor Sufficient but not excessive bulk or cellulose should be provided to stimulate elimination

Protein

Amount Normal

Fat

Amount Normal
Qualifying factor Unabsorbable inorganic oil is used as an intestinal lubricant Excessive use of mineral oil should be avoided however as it interferes with the absorption of carotene

Minerals

Amount Normal

Vitamins

Amount Normal
Qualifying factor There should be liberal amounts of foods containing thiamine to promote the tonicity of the digestive tract Medication is prescribed when needed to increase the thiamine content

Fluid

Amount Normal 6 to 8 glasses daily
Qualifying factor Foods as well as beverages supply fluid

Foods

Milk adds to the thiamine content of the diet It is also a good source of other vitamins and of protein calcium and phosphorus carbohydrate and fat
Meat fish poultry and egg provide efficient protein and varying amounts of minerals and vitamins The glandular organs fish roe and eggs add to the thiamine content of the diet
Butter fortified oleomargarine and cream provide vitamin A besides adding to the fat content of the diet Vegetable oils and fats that have not been fortified are lacking in vitamin A
Vegetables and fruits also contribute thiamine and their cellulose and organic acids have laxative properties They tend to form gas and act as a slight stimulant by breaking up hard masses in the intestine They supply other vitamins as well as minerals and carbohydrate in varying amounts Three to four servings of vegetables and two to three servings of fruit should be taken daily for the necessary cellulose

The nutritional history of the patient is of great importance in revealing factors emotional and environmental as well as clinical, that are direct causes of, or predisposing to, symptoms

Education of the patient

The patient should learn the meaning of food allergy and its relation to his condition He should understand that strict adherence to the diet is necessary to evaluate the effectiveness of the diet He should learn that by taking larger amounts of the foods that he can tolerate and by including in his diet foods with which he may be unfamiliar or unaccustomed but which are allowed, he can help to fulfill his requirements of food constituents and calories

In addition to verbal instruction he should be given printed material to take home This should include

Lists of foods that he is not to eat including the "hidden" foods—those containing even minute amounts of a forbidden food that is not visible or revealed by taste or descriptive name

Lists of foods that he *can* eat (including only the foods to which he is not sensitive) with the amounts necessary to fulfill normal food requirements

Lists of equivalents within the food groups allowed, to help him to vary his meals

Recipes which contain only foods that are allowed—for example, recipes for bread that contain only the cereals allowed

All of these instructions must be adapted to the intelligence of the patient

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Acne
Angioneurotic edema
Bronchial asthma
Certain rheumatic conditions
Constipation
Eczema
Gastrointestinal disturbances
Hay fever
Migraine
Nasal obstructions
Pruritis
Purpura
Sinus conditions
Skin eruptions
Upper respiratory infections
Urticaria
Vasomotor rhinitis

ATONIC CONSTIPATION

Dietary Outline

Body part affected The gastrointestinal tract particularly the colon

Physiology Formation of feces that are soft but firm in consistency and which contain undigested residue of food unabsorbed secretions water and bacteria elimination of feces, sufficient in quantity and at regular frequency—daily or at least every forty-eight hours Absorption of water

Abnormal conditions Regular action of the bowels is deranged

Irregularity, infrequency and difficulty of defecation
Stools insufficient in quantity
Stools abnormally hard and dry
Lack of muscle tone of the intestine
Redundant colon sometimes present

aboratory data Routine urine and blood studies as required in a complete medical examination

Radiographs of the intestine to determine type of constipation and to rule out organic obstructions

Examination of feces

ietetic treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain desired weight The foods supplied must be smooth in consistency and as nearly as possible non irritating to the gastrointestinal tract (see Peptic Ulcer p 178)

he food constituents

Carbohydrate

Amount Normal

Qualifying factor Concentrated sweets and coarse foods should be omitted to avoid irritation

Protein

Amount Normal

Fat

Amount Normal

Minerals

Amount Normal

Qualifying factor If amounts supplied by food are insufficient medication should be prescribed

Vitamins

Amount Normal

Qualifying factor Foods should supply thiamine in liberal amounts to improve the tonicity of the digestive tract When foods do not supply sufficient amounts of thiamine medication is prescribed

Fluid

Amount Normal

Qualifying factor The desired amount may be supplied by foods as well as by beverages

oods

A Consistency

The diet must be smooth and bland Any residue should be soft and non irritating Fruits and vegetables should be cooked and strained or mashed to soften the cellulose and as much of the cellulose as possible should be removed Refined cereals should be used but whole grain cereals are permitted if very finely ground or cooked and strained Only meat of short fiber and fish or chicken should be given and in some conditions they are entirely omitted Under these circumstances the mineral and vitamin intake may be inadequate and medication must be prescribed

Variety in food as to kind and consistency is increased gradually as the patient s condition improves until the normal diet can again be used

B Foods to be avoided as causing irritation because they increase motility stimulate the gastric juice contain undigested fiber or tend to form gas

Fruits vegetables whole grain cereals and nuts that contain appreciable amounts of cellulose

Foods that ferment readily and form gas—concentrated sweets and foods high in cellulose

Highly seasoned foods

Tea coffee and cocoa

Alcohol used sparingly if at all

C Foods for the diet

Milk a bland food containing no cellulose and contributing richly to body needs may be used as the basis of this diet It provides a good quality of protein that is non stimulating easily digested carbohydrate and fat liberal amounts of calcium and phosphorus and varying amounts of the vitamins

Whole grain bread and cereals are excellent sources of thiamine and of cellulose as well as of carbohydrate Their mineral content also is high At least one serving of a whole grain product should be taken at each meal

Candy and concentrated starches and sweets should not be allowed to the extent of excluding from the day's food intake the foods necessary to supply vitamins and minerals in adequate amounts

Meals

Meals may follow the established routine of the patient but must include the total amou of food necessary to fulfill the food prescription Eating between meals is not desirabl except when intermediate feedings at regular hours are necessary Fluids taken befor and after meals, particularly the breakfast often facilitate the bowel movement

Environmental factors that influence the effectiveness of the diet

Sufficient amounts of rest and sleep a liberal intake of water the establishment of a regular time for the daily bowel movement and freedom from mental and emotional distress assist bowel elimination Comfortable toilet facilities should be available with satis factory conditions of heat, light and ventilation Exercises to increase muscle tone and to improve posture should be directed by the physician Dental defects should be cor rected, for proper mastication

Education of the patient

The patient should be shown a picture or chart of the intestine or colon He should under stand what its function is and that in his body its functioning is faulty, needing to be "toned up" He should understand that the purpose of his diet is to stimulate the in testine or colon through a food intake that is adequate both in kind and amount He should understand that proper habits of hygiene are of great importance in cultivati daily bowel elimination—in particular the visit to the toilet at a regular time an so planned that there will be no sense of hurry also that the response to the call fo defecation should not be delayed lest the desire pass away

Abnormal conditions and diseases that may be found in association with atonic constipation

Avitaminosis
Gastric disturbances
Headache
Malaise
Poor posture
Psychoneurosis
Symptoms of fatigue

SPASTIC CONSTIPATION

Dietary Outline

Body part affected The gastrointestinal tract particularly the colon

Physiology Formation of feces that are soft but firm in consistency and which contain u gested residue of food unabsorbed secretions water and bacteria elimination of feces, ficient in quantity and at regular frequency—daily or at least every forty eight hours A sorption of water

Abnormal conditions Spasm or alternating spasm and atony
Redundant colon in some cases
Extreme sensitivity to any type of stimulation

Contributing factors Hyperirritability of the colon due to
Excessive use of cathartics
Too liberal use of coarse foods
Immoderate use of foods that are chemically stimulating
Immoderate use of tobacco and alcohol
Emotional disturbances
Body fatigue
A combination of these various factors

Pathological physiology Destructive ulcerating lesions involving the colon, wholly or in part, with marked inflammation

Laboratory data Routine urine and blood studies as required in a complete medical examination
Examination of the feces
Proctoscopic examination
Bacteriological examination of secretions from lesions in the colon
Radiographic studies

Dietetic treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain desired weight The food must be non irritating to the digestive tract

The food constituents

Carbohydrate
Amount Normal
Qualifying factor Cellulose which is an irritant and concentrated sweets which may form gas and produce irritation should be excluded

Protein
Amount Normal
Qualifying factor Meats of long fiber, irritating to the colon should not be given

Fat
Amount Normal

Minerals
Amount Normal
Qualifying factor If sufficient amounts are not supplied by food medication should be prescribed

Vitamins
Amount Normal
Qualifying factor *Some authorities give a high vitamin diet If sufficient amounts are* not provided by food medication is prescribed

Foods

A Consistency
The diet should be smooth with as little residue as possible Fruits and vegetables should be cooked and strained to soften the cellulose and to remove as much of it as possible Cereal products must be of such a consistency as to avoid irritation White bread and crackers are generally used but those made from very finely ground whole grain flour are allowed Cereals should be refined but whole grain cereals are permitted if very finely ground or cooked and strained

B Foods to be avoided as causing irritation because they increase motility, stimulate the gastric juice contain undigested fiber or tend to form gas
Fruits, vegetables and whole grain cereals that contain appreciable amounts of cellulose
Meats containing long fiber
Concentrated sweets which ferment easily and produce gas
Condiments and spices —pepper vinegar mustard and other sources
Extractives from meat —broths soups and gravies
Very hot or very cold foods especially the latter
Nuts
Tea coffee and cocoa

C Foods for the diet
Milk a bland food without cellulose and with rich contributions for body needs can be used freely in most cases
Meat fish and chicken are valuable for their protein iron and vitamins and should be added to the diet as soon as tolerated the most tender kinds being given first
Eggs are a good source of protein fat phosphorus iron and most of the vitamins
Butter and cream provide fat which carries vitamin A whereas vegetable oils and fats are lacking in the vitamin unless they have been fortified with vitamin A

Meat, fish and poultry, valuable for their protein, mineral and vitamin content, should be given as soon as possible, using first the kinds that are of short fiber The glandular organs, and fish roe and oysters are sources of thiamine, riboflavin and niacin

Eggs are usually well tolerated They are a good source of protein, phosphorus iron and most of the vitamins

Butter and cream provide fat which carries vitamin A, whereas vegetable oils and fats are lacking in the vitamin unless they have been fortified with vitamin A

Vegetables and fruits, which supply minerals and vitamins, as well as carbohydrate in varying amounts, should be added to the diet as soon as they can be tolerated Strained orange juice and tomato juice may be given early in treatment, and as the condition of the patient improves, vegetables containing least cellulose, and tender vegetables, such as young beets and carrots, the tender leaves of spinach squash, string beans, asparagus tips and others of like consistency, may be given *without straining*

White bread and refined cereals that have been enriched may be used as they carry vitamins and minerals

Sugar and concentrated sweets, which ferment easily and produce gas and consequently are irritating, should be included only in very small amounts

Meals

Meals may be adjusted to the established routine of the patient, provided the amount and kinds of food eaten fulfill the food prescription

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene both physical and mental are exceedingly important—in particular the habit of the regular bowel movement adapted to the daily routine Medication should be used only as prescribed by the physician

Education of the patient

The patient should be shown a picture or chart of the intestine, in both normal and spastic conditions He should understand the function of the intestine and that his condition is due to irregular spasms of the colon

He should understand that the purpose of his diet is to overcome this irritability and help to restore the normal movement of the bowel by using foods that are soft and smooth in consistency and non irritating

He should be shown the refined cereal, and the use of the sieve or strainer to remove the roughage in his servings of fruit vegetables and whole grain cereal He should be given a list of the types and kinds of food that he should avoid He should have recipes to help him to vary his diet

He should recognize that sufficient rest periods and sleep and a regular time for the bowel movement under conditions of leisure and serenity, are helpful in establishing the habit of daily bowel elimination

Abnormal conditions and diseases that may be found in association with spastic constipation

Avitaminosis
Gastric disturbances
Headache
Poor posture
Psychoneurosis
Symptoms of fatigue

COLITIS

Dietary Outline

Body part affected The large intestine

Physiology Formation and elimination of the feces which contain indigestible food residue, unabsorbed digestive secretions, water, and bacteria

Abnormal conditions Changes in secretion (mucous type)
Changes in motility (spastic and atonic types)

Pathological physiology Destructive ulcerating lesions involving the colon wholly or in part with marked inflammation

Laboratory data Routine urine and blood studies as required in a complete medical examination
- Examination of the feces
- Proctoscopic examination
- Bacteriological examination of secretions from lesions in the colon
- Radiographic studies

Dietetic treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain desired weight The food must be non irritating to the digestive tract

The food constituents

Carbohydrate
- Amount Normal
- Qualifying factor Cellulose, which is an irritant and concentrated sweets which may form gas and produce irritation should be excluded

Protein
- Amount Normal
- Qualifying factor Meats of long fiber irritating to the colon should not be given

Fat
- Amount Normal

Minerals
- Amount Normal
- Qualifying factor If sufficient amounts are not supplied by food, medication should be prescribed

Vitamins
- Amount Normal
- Qualifying factor Some authorities give a high vitamin diet If sufficient amounts are not provided by food medication is prescribed

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- Condiments and spices —pepper vinegar mustard and other sources
- Extractives from meat —broths soups and gravies
- Very hot or very cold foods especially the latter
- Nuts
- Tea coffee and cocoa

C Foods for the diet
- Milk a bland food without cellulose and with rich contributions for body needs can be used freely in most cases
- Meat fish and chicken are valuable for their protein iron and vitamins and should be added to the diet as soon as tolerated the most tender kinds being given first Eggs are a good source of protein fat phosphorus iron and most of the vitamins
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Qualifying factor Meats of long fiber irritating to the colon, should not be given

Fat

Amount Normal

Minerals

Amount Normal

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Vitamins

Amount Normal

Qualifying factor Some authorities give a high vitamin diet If sufficient amounts are not provided by food medication is prescribed

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Butter and cream provide fat which carries vitamin A whereas vegetable oils and fats are lacking in the vitamin unless they have been fortified with vitamin A

Laboratory data Routine urine and blood studies as required by a complete medical examination

Basal metabolism test

Other studies to determine the presence of endocrine disturbances

Dietetic treatment Foods to supply the food constituents in amounts to fulfill body needs and attain desired weight The normal requirements for protein, minerals and vitamins should be maintained The caloric value of the intake is reduced so that the body will burn its own adipose tissue The loss of weight after the first weeks should average one to two pounds per week There may be periods of no weight loss due to the maladjustment of the water balance

The food constituents

Carbohydrate

Amount Decreased

Qualifying factor Sufficient amounts should be given to avoid acidosis

Protein

Amount Normal

Qualifying factor There should be sufficient complete protein

Fat

Amount Decreased

Qualifying factor There should be sufficient amounts of the foods that supply vitamin A

Minerals

Amount Normal

Qualifying factor When amounts supplied by food are insufficient which may oc extremely low caloric diet, medication should be prescribed

Vitamins

Amount Normal

Qualifying factor When amounts supplied by food are insufficient which may occu extremely low caloric diet medication should be prescribed

Foods

Milk and cheese though rich in fat are used because they are high in calcium and phosph furnish an excellent quality of protein and the vitamins in varying amounts Skim milk or buttermilk, from which the fat has been removed, may be given and the amour butter or cream increased proportionately

Lean meat and poultry are good sources of iron thiamine riboflavin and niacin as well as p tein and do not add appreciably to the fat content of the diet Lean fish provides a go quality of protein phosphorus and some of the vitamins without adding fat Eggs, a though they contain fat, should be used for their valuable contributions of protein iro and vitamins

Butter fortified oleomargarine and cream supply vitamin A and the use of butter in particular is advisable but should be restricted to the amount allowed by the diet Vegetable oils and fats do not carry vitamins

Vegetables and fruits (5 per cent and 10 per cent carbohydrate) should be used freely Their caloric value is low, they provide minerals and vitamins and help to satisfy the appetite

Breads and cereals because of their high carbohydrate content must be carefully prescribed The whole grain or enriched products should be used for their content of minerals and vi tamins

Sugar and other concentrated sweets such as jellies, honey and candy should be avoided, as they contain essentially little else than carbohydrate

Tea and coffee (without cream milk or sugar) have no food value and fat free broth has very little

Meals

The number of meals may conform to the usual daily routine of the patient but the amount of food eaten must be kept within the limits of the food prescription Intermediate feedings if taken should consist of foods with little or no food value, any other food taken must be counted as a part of the food prescription

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene physical and mental, should be established

Exercise beyond the usual amount should be directed by the physician

The patient should be cautioned concerning the danger of patent reducing machines and medicines Glandular medication should be taken only under the supervision of the physician

If the patient has been on a normal diet there will be no increase in the cost of the obesity diet but if his diet has been inadequate consisting largely of concentrated carbohydrate foods with little fruits or vegetables the addition of these will increase the cost

Education of the patient

Pictures and charts should be used to help the patient to contrast his overweight with the normal weight for his height and age and to realize the excess amount he is carrying He should be shown with graph or picture that the prognosis for health and longevity is less favorable for the obese individual and that reduction in weight would promote health as well as comfort and appearance

He should understand that his intake of foods supplying fuel should be in accordance with the demands of his activity that his obesity is due primarily to the intake of larger amounts of fuel foods than his activity requires the excess being stored in his body as fat He should see then that the purpose of his diet is to limit the food intake in particular with respect to foods of high fuel value, so that he will use his body fat as well as his food intake to supply his energy requirement

He should be cautioned that with any reduction in food intake the diet must provide protein vitamins and minerals in amounts adequate for growth and health

The fuel value of some of the common foods should be demonstrated to him especially those of concentrated carbohydrate

He should be helped to vary his diet through a knowledge of equivalents always keeping within the limits of the diet

His understanding of the theory of his diet and his experience in carrying the plan to a successful issue should enable him always to maintain a proper balance between his food intake *and his energy requirements*

Abnormal conditions and diseases that may be found in association with obesity

Avitaminosis
Cardiovascular diseases
Constipation
Diabetes
Gall bladder disturbances
Hypertrophic arthritis
Psychoneuroses

DIABETES

Dietary Outline

Body part affected Islands of Langerhans of the pancreas

Physiology Secretion of a hormone insulin which bears an important relationship to the metabolism of glucose and fat Evidence that the secretions of the endocrine glands particularly the pituitary and the adrenals and possibly the thyroid balance the action of insulin in the metabolism of glucose

Pathological physiology Deficiency of insulin secretion by the Islands of Langerhans, causing a deficient glycogen storage and deficient glucose oxidation and utilization Derangement of the balance between insulin and the secretions of the endocrine glands which tends to produce an abnormal blood sugar Inheritance of the disease

Laboratory data Routine urine and blood studies as required by a complete medical examination

Special laboratory tests for diagnosis and treatment

Urine analysis

Specific gravity—usually high

Sugar—present in varying amounts

Diacetic acid or acetone bodies—denoting acidosis when present

Albumin—present in renal involvement

Examination of sediment

Blood sugar—higher than normal

Test taken fasting or at a specified time after meal

Test for glucose tolerance used to diagnose borderline or mild cases

Blood Cholesterol

Usually higher than normal when disease is not under control, or when there are associated diseases involving the metabolism of fat

Dietetic treatment For the adult, foods to supply the food constituents in amounts adequate to fulfill body needs and maintain desired weight It is advisable that the diabetic patient maintain his normal weight or even remain slightly below normal When the caloric value of the intake is kept below the normal over a period of time, and the basal metabolic rate lowered thereby, the body's food requirement will be decreased The amounts of the food constituents, carbohydrate, protein and fat, in the diet are determined by the different theories of diet therapy held by various authorities For the child, a normal diet to maintain desired weight and growth and sufficient insulin to utilize this diet

The food constituents

Carbohydrate

Amount Decreased

Qualifying factor When carbohydrate sufficient to help to maintain the desired weight is not tolerated, medication, insulin, is prescribed

Concentrated sweets are not given, their content of carbohydrate being too readily available, flooding the blood stream with glucose which overflows into the urine

Protein

Amount Normal

Qualifying factor Some physicians increase the protein above the normal

Fat

Amount Normal—low or high depending on the practice of the physician

Qualifying factor Some authorities believe that there is a relation between the amount of cholesterol in the blood and the metabolism of glucose therefore they decrease the fat content of the diet in order to decrease the cholesterol in the blood

Minerals

Amount Normal

Qualifying factor If food does not meet the requirements, medication should be given

Vitamins

Amount Normal

Qualifying factor If food does not meet the requirements, medication should be given

Diet for Children

For normal growth and development, children require a normal diet with sufficient insulin to utilize it Concentrated sweets such as candy and sugar are not given, their content of carbohydrate being too readily available, flooding the blood stream with glucose which overflows into the urine

Foods

Milk or cheese should be included in the various types of diabetic diets for their calcium content While milk is an excellent source of protein and fat, it must be kept in mind that it is comparatively high in carbohydrate It is a good source of phosphorus and vitamins Cottage cheese or skimmed mill may be used to decrease the fat, or whole milk if the fat is kept within the limits of the diet

Meat, fish poultry and eggs add to the protein of the diet and to the mineral and vitamin content in varying amounts If legumes are used their high carbohydrate content must be considered

Butter fortified oleomargarine and cream provide vitamin A as well as fat while the vegetable oils are lacking in this vitamin If vegetable oils are used care must be taken to make adequate provision of the vitamin

Vegetables and fruits (5 per cent and 10 per cent carbohydrate) provide varying amounts of carbohydrate add to the mineral and vitamin content of the diet and help to satisfy the appetite by giving a feeling of fullness 15 per cent and 20 per cent vegetables may be given with discretion but their use limits the amounts of vegetables of lower carbohydrate content The potato can be used interchangeably with bread or cereal for carbohydrate

Enriched and whole grain bread and cereal are valuable for their mineral and vitamin content but should not be given in amounts to cause the carbohydrate to exceed the requirement The diabetic diet of today is liberal enough to obviate the need of "diabetic foods" such as special bread substitutes

Concentrated sweets such as desserts are excluded from the diet Ice cream may be given occasionally, but its food value must be estimated and included in the food prescription

Meals

The number of meals may conform to the usual daily routine provided the food eaten is within the limits of the food prescription When insulin is taken provision should be made for food before bed time to avoid a possible reaction

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene are important It is essential to guard against infection, and for this reason to give proper care to the feet and teeth and to have prompt treatment for colds and all skin lesions

Education of the patient

The patient should have an understanding of the pathology of his condition and learn how he can cooperate to the fullest extent in treatment Whenever possible he should be given printed material to help him to carry out the treatment at home He should be shown the sizes and amounts of the servings of foods allowed him so that he can follow his diet without finding it necessary to weigh his food His knowledge of food equivalents should enable him to vary his diet and in case of acute illness to change it to a soft or liquid consistency

As a check on his diet he should know how to test his urine and to record the results He should be able to administer insulin to himself and in order to safeguard daily treatment another member of the family should be taught the procedure The patient should be able to recognize the symptoms of an insulin reaction and to know the treatment for it He should be given an identification card

He should understand the importance of a careful hygienic regime both physical and mental and the necessity of reporting colds and infections promptly to the physician

Abnormal conditions and disease that may be found in association with diabetes

Cardio vascular diseases
Gall bladder diseases
Goiter
Liver disorders
Obesity often a precursor to diabetes
Tuberculosis
Underweight

LIVER DISORDER

Dietary Outline

Body part affected The liver

Physiology Intermediary metabolism—storage disintegration transformation and redistribution—of the various food constituents as follows

Carbohydrate Storage of glycogen in the liver and formation of glucose for the demands of the body—regulating the amount of glucose that passes into the blood stream

Protein Deamination of amino acids with formation of ammonium carbonate—the precursor of urea synthesis of urea detoxification of harmful end products of protein which enter the blood stream and are excreted by the kidneys Storage of protein in the liver

Fat Deposition of fat in relation to the amount of glycogen present in the liver Disintegration of fat in connection with carbohydrate metabolism

Minerals Storage and metabolism of minerals particularly of iron

Vitamins Concerned with the absorption storage and utilization of the various vitamins Carotene is absorbed in the presence of bile and is converted into vitamin A in the liver

Formation and secretion of bile which facilitates the digestion and absorption of fat and the absorption of carotene in the body removes waste material from the liver and acts as a regu

lator of intestinal putrefaction The principal constituents of bile are mucin, bile salts, lipoids (cholesterol, lecithin and other phospholipins) and bile pigments (bilirubin and biliverdin)

Secretion into the bile of the products of the disintegration of the hemoglobin (bilirubin)

Detoxification of harmful products, due to ingestion of toxic substances and noxious products of putrefaction and metabolism

Production of prothrombin

Pathological physiology Disturbance of one or several of the above functions as a result of degenerative and inflammatory changes in the cells, alterations in the circulatory system, infections (chronic and acute), toxic processes, disorders affected by diseases of the biliary tract and tumors, benign and malignant (See abnormal conditions and diseases that may be found in association with liver disorders) *In generalized liver damage, vitamin A storage in the liver* is reduced The deficiency is due to biliary obstruction and failure of absorption of vitamin A or failure of conversion of carotene into vitamin A resulting from liver function impairment Thiamine may not be utilized in severe liver damage of alcoholic cirrhosis Liver cirrhosis may be helped by a high protein diet with generous supply of the vitamin B complex according to some authorities There seems to be a hemorrhagic tendency in patients with liver disease which may be characteristic of ascorbic acid deficiency

Laboratory data Routine urine and blood studies as required in a complete medical examination "There is no one test available that will measure all the manifold functions of the liver " The following are special laboratory tests to determine the particular functions of the liver that are impaired

- Galactose tolerance test to indicate the ability of the liver to build glycogen
- Determination of the urea in the blood, which defines the condition of the liver and its relation to protein metabolism
- Hippuric acid test to determine the detoxifying activity of the liver
- Bromsulphalein test to determine the liver s ability to push out abnormal substances
- Prothrombin test for indicating hemorrhagic condition of the liver
- Determination of cholesterol and cholesterol esters to establish the ratio between them as indicative of the liver disorder
- Tests for the concentration of bile pigments and their derivatives
- Numerous other tests for proof of the secretory functions of the liver cells

Dietetic treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain the desired weight The type and extent of the impairment of the liver function *give direction for the amounts and kinds of food constituents to be used* The diet should be bland non irritating and non stimulating

A high carbohydrate intake has a prophylactic as well as a therapeutic value

According to recent clinical research a normal protein is given and even an increase above the normal according to some authorities as it is found that the protein protects the liver

Other authorities still restrict protein in liver disorders The only types of animal *protein* allowed in these disorders are those obtained from the dairy products and in hypercholesterolemia only foods from vegetables sources are permitted by some authorities (no milk is allowed)

The fat is usually decreased to low normal in chronic conditions In acute disorders, also in impaired functions of the liver that affect the bile and in liver disturbances affected by or due to disease of the biliary tract, the fat is drastically reduced In hypercholesterolemia some authorities reduce the fat and use only vegetable sources

The vitamins seem to have a protective action for the liver Therefore additional vitamins, *especially thiamine riboflavin* and *niacin* are given to prevent liver cell damage, to compensate for any loss due to decreased absorption, and for the maintenance of normal liver structure and function

The food constituents

A Acute Liver Disorder

Carbohydrate

Amounts Increased to approximately 50 per cent above the normal

Qualifying factors Carbohydrate in the diet must usually be increased by sugar concentrates such as dextrose and lactose

Protein

Amount Normal

Qualifying factor Authorities who prescribe low protein usually restrict animal protein

Fat

Amount Decreased to 50 per cent below the normal

Qualifying factors Animal fat (dairy products) is restricted by certain authorities to 50 per cent of the total intake of fat

Minerals

Amount Normal

Qualifying factor If amounts supplied by food are inadequate, medication should be prescribed by the physician

Vitamins

Amount Increased amounts particularly of vitamin A thiamine, riboflavin and niacin

Qualifying factor Medication will be necessary to supplement the diet

Fluids

Amount Normal

B Chronic Liver Disorder

Carbohydrate

Amount Increased to approximately 50 per cent above the normal

Qualifying factor Sugar concentrates dextrose and lactose, may be used to increase the carbohydrate

Protein

Amount Normal or increased

Qualifying factor Authorities who prescribe a lower protein usually restrict animal protein

Fat

Amount Decreased

Qualifying factor Animal fat (dairy products) is restricted by certain authorities to 50 per cent of the total intake of fat

Minerals

Amount Normal

Qualifying factor If amounts supplied by food are inadequate medication should be prescribed by the physician In ascites certain authorities restrict salt

Vitamins

Amount Increased amounts particularly of vitamin A thiamine riboflavin and niacin

Qualifying factor Medication will be necessary to supplement the diet

Fluids

Amount Normal

Qualifying factor In ascites the fluid is restricted

C Hypercholesterolemia (Diet by certain authorities)

Carbohydrate

Amount Increased to approximately 50 per cent above the normal

Qualifying factor The carbohydrate must be obtained from vegetable sources only Sugar concentrates dextrose and lactose may be used to increase the carbohydrate

Protein

Amount Low normal

Qualifying factor Vegetable sources only are used (no milk)

Fat

Amount Decreased—½ gram per kilogram

Qualifying factor Vegetable sources only are used The sterols of plants are not absorbed and so are not estimated for their cholesterol content

Minerals

Amount Normal

Qualifying factor On this restricted diet the amounts supplied by the foods are inadequate, and medication, especially calcium, should be prescribed by the physician

Vitamins

Amount Increased

Qualifying factor On this restricted diet the amounts of the vitamins are inadequate and medication should be prescribed by the physician

Fluids

Amount Normal

Foods

Milk is used in the diet only when food from animal sources is permitted Since at least one half pint (1 cup) of milk daily is necessary even to approximate the calcium requirement without using medication, when milk is restricted entirely as in hypercholesterolemia, calcium medication must be prescribed Moreover, in such conditions foods must be chosen carefully to provide vitamins in adequate amounts In addition to protein and calcium, milk supplies some fat and is a good source of phosphorus and vitamins If skimmed milk is used in place of whole milk, the fat may be replaced by butter or cream

Meat, fish and poultry are given as in the normal diet unless the protein prescribed is low

Butter or cream (animal fat) is limited to a greater degree in acute conditions Vegetable fats—such as corn, cotton seed and olive oils, and oleomargarine and hydrogenated fats manufactured from them—are allowed

Vegetables are given in large amounts for their carbohydrate, mineral and vitamin content Seed vegetables and the potato make valuable contributions to the protein of the diet, when animal protein is limited or entirely restricted When a gastrointestinal disturbance is associated with the liver disorder the vegetables given should be of kinds that are easily digested and low in residue (See Peptic Ulcer, p 178)

Fruits are given in restricted amounts in diets for acute and chronic disorders and in hyper cholesterolemia They furnish minerals vitamins and carbohydrate Fruit juices reinforced by sugar concentrates such as dextrose and lactose may be used for nourishment between meals They prevent the feeling of hunger which is the usual result of diets when restricted in protein or fat and obviate the necessity of taking abnormal amounts of carbohydrate at meal times

Breads and cereals increase the vitamin and mineral content of the diet, as well as the carbo hydrate Their content of protein is the only factor that limits their use when protein *is restricted*

Sugars and sweets may be given in as large amounts as the patient can tolerate Such sweets as candies, jellies and marmalades are pleasing forms with which to increase the carbo hydrate content of the diet Dextrose and lactose are used in the preparation of foods to help further to fulfill the high requirements of this food constituent

Coffee and tea should be used in great moderation and alcohol is not permitted

Meals

The diet may follow the patient s customary routine However feedings between meals are usually given again to help fulfill the high carbohydrate requirement

Environmental conditions

Good habits of hygiene physical and mental are essential

Education of the patient

A diagram may be shown the patient with which to explain the digestive processes and how the products of digestion are carried to the liver where they are stored and made ready for use by the body tissues or sent to other organs to be disposed of as waste Such a diagram will help the patient to realize that every kind of food ingested demands activity on the part of the liver ' The patient should understand how his diet will help to compensate for his particular liver disorder and further, will protect the liver and keep it in as satis factory condition as possible He should be impressed with the importance of keeping within the limits of his diet and of avoiding forbidden foods and overindulgence in protein and fat

Abnormal conditions and diseases that may be found in association with liver disorders

- Anemias
- Ascites
- Avitaminosis
- Biliary tract diseases
- Cholecystitis
- Constipation
- Febrile diseases
- Gastrointestinal disturbances
- Infections
- Menstruation
- Nephritis
- Obesity
- Pregnancy
- Underweight

KETOGENIC DIET

Used in Certain Types of Epilepsy

Body part affected Symptoms are being treated not a disease

Physiology Not known

Pathological physiology Pathological changes in the central nervous system

- Functional instability of the nerve cells
- Disturbance somewhere in the extracerebral metabolism as in respiration or digestion
- Disturbance of the water metabolism with a positive water balance causing a cerebral hydrated state

Laboratory data Routine urine and blood studies as required in a complete medical examination

- Neurological examination to rule out birth injury
- Blood and spinal fluid examinations to rule out syphilis
- Determination of blood calcium and phosphorus and muscle irritability to rule out tetany
- Radiographs to rule out brain injury trauma or increased pressure A repetition of these, as a later examination may often reveal a disturbance which did not appear at first
- Frequent urine analyses when patient is under treatment to determine whether there is a negative nitrogen balance or ratio and to see if a ketosis has developed

Dietetic Treatment Foods to supply the food constituents in amounts adequate to fulfill body needs and maintain the desired weight The carbohydrate must be reduced and the fat increased until a ratio is established that will maintain the body in a state of ketosis (Table 55) In the dehydration diet the fluid intake is reduced until a balance is obtained between the intake and the outgo

The food constituents

Carbohydrate

Amount Decreased to lowest amount possible

Qualifying factor Through a greatly decreased carbohydrate, the fat is incompletely oxidized producing a ketosis

Protein

Amount Adult —low normal ⅔ gram per kilogram average weight
Child 1 gram per kilogram average weight

Qualifying factor Sufficient amounts of complete protein should be provided

Fat

Amount Increased

Qualifying factor The fat should be in excess of the amount that can be completely oxidized

Minerals

Amount Normal

Qualifying factor If sufficient amounts are not provided by food medication must be prescribed

Vitamins

Amount Normal

Qualifying factor If sufficient amounts are not provided by food, medication must be prescribed

Fluid

Amount Ketogenic Diet Normal

Dehydration Diet Decreased to 600 cc in 24 hours

Foods

Milk cannot be used because of the amount of carbohydrate that it contains The calcium content of the diet, therefore, is inadequate Cream is used for its high fat and low carbohydrate content and it contributes some calcium Cheese also supplies calcium, and contains very little or no carbohydrate However, it is usually necessary to prescribe calcium medication, particularly for children

Meat fish, chicken and eggs may be given, but since the protein is usually kept at low normal the amounts used must be small *This affects the content of iron and phosphorus in the* diet, and to some extent the vitamin content

Butter or fortified oleomargarine is given liberally, which ensures sufficient amounts of vitamin A Oils are sometimes given to help supplement the fat content of the diet but vegetable oils supply no vitamins

Vegetables and fruits averaging 5 per cent to 10 per cent carbohydrate, are used, but cannot be given in liberal amounts since the carbohydrate content of the diet must be kept extremely low This affects the mineral and vitamin content of the diet materially, and medication may be necessary to supplement the food

Breads and cereals are usually eliminated because of their high carbohydrate content The exclusion of the whole grain or enriched bread and cereal decreases the mineral and vitamin content of the diet

No sugar or sweets of any kind are allowed since carbohydrate is so drastically restricted Saccharine which has no food value is used to sweeten prepared foods such as custards and very sour fruits such as rhubarb The elimination of sugar and sweets is also favorable in the dry diet as they increase thirst and favor water storage *This is also true of salt*

Agar and well washed bran may be used to replace the bulk usually supplied by fruits, vegetables and whole grain cereals They help to give a feeling of fullness or satisfaction and to keep the patient from breaking his diet Agar may be combined with the fruit juice allowed and served with cream as a dessert Well washed bran may be used with cream, as a cereal, or may be made into wafers

If fluids are not restricted clear broth may be given which helps to give a feeling of satisfaction

Meals

Meals may follow the established routine of the patient provided that the food eaten is within the limits of the food prescription However, the amounts prescribed *for each meal* must be definitely followed

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene both physical and mental should be established and the daily routine carefully followed Medication should be taken only under the direction of the physician

Education of the patient

The patient should understand that his diet establishes a very delicate balance between carbohydrate and fat It is explained that because of the low carbohydrate the fat will be only partially burned and its products will appear in the urine He should understand that the purpose of his diet is to produce this condition that the intake of even a very small amount of carbohydrate beyond that which the diet allows would defeat this purpose and that he must therefore adhere closely to his diet

He should learn how to test his urine and should understand that the test is a check on the effectiveness of the diet

The sizes of servings of food allowed should be demonstrated to ensure correctness of amounts in a diet so limited and the scales should be used when exact measurements are required

The patient should be given printed directions to help him to carry out his diet at home with recipes (including recipes for fillers such as agar jelly and bran wafers) and lists of equivalents to enable him to vary his diet by using different foods Gauss suggests that in the dry diet thirst may be alleviated by the use of hot, stringent gargles chewing gum, chewing of bitters such as orange peel or the slow sipping of grapefruit juice

The patient should take frequent rest periods He should avoid emotional stress, and should be encouraged and helped not to be conscious of his condition but to lead as nearly as possible a normal life with pleasurable activity

When the child is the patient the mother should understand the treatment and help to make environmental conditions favorable to good mental and physical hygiene

Abnormal conditions and diseases that may be found in association with epilepsy

Constipation

In the treatment of pyelitis migraine and acute chorea, the ketogenic diet is also used by some authorities

NEPHRITIS

Dietary Outline

Body part affected The kidneys

Physiology Excretion of the end products of protein metabolism

Pathological physiology Due to altered kidney function, the end products of protein metabolism are not excreted as well as normally and in the terminal stages may even accumulate in the body There is a depletion of the alkaline reserve of the body in order to compensate for the failure of the kidney to maintain the proper acid base balance

Laboratory data Routine urine and blood studies as required in a complete medical examination

- Urine analysis
  - Volume—variable but greater increase above normal shown at night than during the day
  - Reaction—increased acidity
  - Albumin—none to large amounts
  - Specific gravity—variable diminished with decreased renal function
  - Microscopic examination—cells casts or bacteria may be present
- Phenol sulphonephthalein test—to show impairment of kidney function
- Urea or other clearance tests—to show degree of renal impairment
- Blood
  - Retention of end products of protein metabolism shown by increased non protein nitrogen and urea
  - *Chlorides—increased in some types of nephritis*
  - Total protein
  - Hemoglobin

Dietetic Treatment Foods to supply the food constituents in amounts adequate to fulfill body needs The protein content of the diet depends upon the type of nephritis and the treatment of edema when present is according to the theory held by the physician

The food constituents

A Acute Nephritis

Carbohydrate

- Amount Normal or increased
- Qualifying factor Liberal amounts should be given as it spares the body protein more effectively than fat

Protein

- Amount Low normal or decreased
- Qualifying factor Many physicians restrict animal protein to a minimum and some omit it from the diet entirely

Fat

- Amount Normal
- Qualifying factor Liberal amounts should be given to spare body protein and to help to meet body needs

Minerals
Amount Normal
Vitamins
Amount Normal
Fluids
Amount Restricted
Qualifying factor Amount is dependent upon previous day's output of urine

B Chronic Nephritis
Carbohydrate
Amount Normal
Protein
Amount Normal
Fat
Amount Normal
Minerals
Amount Normal
Vitamins
Amount Normal
Fluids
Amount Increased
Qualifying factor Controlled by output of urine

C Nephritis of the Nephrotic Type
Carbohydrate
Amount Normal
Protein
Amount High normal or increased
Qualifying factor To compensate for the loss of protein
Fat
Amount Decreased
Qualifying factor A low fat diet is thought by some to effect a reduction in the blood cholesterol, if that is high
Minerals
Amount Normal
Qualifying factor In the presence of edema some authorities recommend ad ministration of acid salts, together with a neutral diet or one containing a preponderance of acid ash Some authorities restrict sodium chloride
Vitamins
Amount Normal
Fluids
Amount Restricted
Qualifying factor Usually restricted to one quart daily

Foods

Milk At least one half pint daily is necessary even to approximate the calcium requirement without the use of medication When the amount of protein given is decreased to the low level the calcium requirement cannot be fulfilled by milk and medication must be prescribed In addition to protein milk supplies some fat and is a good source of vitamins and phosphorus The cream contains, besides fat, an appreciable amount of protein calcium phosphorus and vitamin A When cream is diluted to the consistency of milk, thereby lowering its content of protein and minerals including sodium chloride, it may be used to advantage when these food constituents are to be decreased

When the amount of meat fish or eggs used is limited because of the restriction in protein care must be taken to fulfill the iron and vitamin requirement Medication may be necessary Meat broths and gravies are omitted as they contain extractives in concen trated form

Butter is a concentrated fat and contributes to the vitamin A content of the diet It does not contain protein in an appreciable amount, whereas cream does

Vegetables, except potatoes and dried legumes contain only small amounts of protein They are good sources of minerals and vitamins The soy bean is valuable as a vegetable source of complete protein

Fruits add minerals and vitamins as well as carbohydrate to the diet but contain only insignificant amounts of protein

Whole grain or enriched bread and cereals are good sources of minerals and of some of the vitamins but they contain an appreciable amount of protein and this must be carefully evaluated in the diet especially if the protein is restricted When supplemented with milk the protein becomes of satisfactory biological value

Sugar syrups cornstarch and tapioca are concentrated carbohydrates without protein They lack minerals and vitamins

Coffee tea and cocoa should be omitted from the diet

If salt free bread and sweet butter are used and no salt is added in the cooking the diet will contain two grams or less of salt

Meals

Meals may be taken at habitual times provided that the food intake fulfills the food prescription

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene, both physical and mental are important

Education of the patient

The patient should have an understanding of the normal functions of the kidneys to be able to recognize the fallacy of some popular beliefs concerning them He should know that except in the acute stage protein foods are used as in the normal diet and are not harmful or destructive In particular the misconception concerning "red" meat should be corrected

The patient should realize that in observing the protective diet he will have an alkaline ash diet In the use of acid therapy (the neutral diet plus acid salts) the content of acid and alkaline ash forming foods should also be explained

In edematous conditions the reason for the restriction of sodium chloride should be explained the content and preparation of food should be described and recipes given

The patient should be given lists of foods to meet the requirement of the diet and again recipes for the preparation of food The sizes of servings should be given—in particular protein equivalents when the protein content of the diet is increased or decreased

The patient should understand the importance of guarding against infections and colds

Abnormal conditions and diseases that may be found in association with nephritis

Anemia

Cardiovascular diseases

Obesity

Retinitis

PREGNANCY

Dietary Outline

Body part affected Maternal and fetal tissues

Physiology Normal functioning of the maternal organism adjusted to meet the demands of the developing fetus

Contributing factors Increased demand on the maternal metabolism by the presence of the fetus

Laboratory data Routine urine and blood studies as required in a complete medical examination

Routine urine analysis at frequent intervals to determine whether the kidneys function normally and to detect the presence of sugar

Dietetic treatment Foods to supply the food constituents in amounts adequate to fulfill body needs of the mother and the developing fetus and to maintain the desired body weight It may be necessary to increase the caloric value of the intake after the fourth month The lack of sufficient calcium, phosphorus and vitamin D may produce rickets in the infant (see Rickets p 207-208)

The food constituents

A Normal

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate is usually better tolerated than fat

Protein

Amount Normal

Fat

Amount Normal

Minerals

Amount Increased, *Calcium—1 5 grams*, Phosphorus—2 grams Iron—15 milligrams

Qualifying factor If sufficient amounts are not supplied by food, medication should be prescribed

Vitamins

Amount Increased Vitamin A—6000 I U Thiamine—1800 micrograms, Riboflavin—2500 micrograms, Niacin—18 milligrams, *Ascorbic Acid—100 milligrams*, Vitamin D—400–800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluid

Amount Normal, 6 to 8 glasses

B Pernicious vomiting

Carbohydrate

Amount Increased

Qualifying factor Carbohydrate is usually better tolerated than fat It is desirable that the patient should have a liberal glycogen reserve

Protein

Amount Normal

Fat

Amount Normal or decreased

Qualifying factor Frequently fat is not well tolerated When the carbohydrate is increased the fat may be decreased to keep the calories at the normal requirement

Minerals

Amount Increased *Calcium—1 5 grams*, Phosphorus—2 grams, *Iron—15 milligrams*

Qualifying factor If sufficient amounts are not provided by food medication *should be prescribed*

Vitamins

Amount Increased Vitamin A—6000 I U Thiamine—1800 micrograms Riboflavin—2500 micrograms, Niacin—18 milligrams, Ascorbic Acid—100 milligrams Vitamin D—400–800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluid

Amount Decreased

Qualifying factor Given in smallest possible amounts between feedings Means other than oral are sometimes used to meet the body demands

C With kidney complications

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate has a protein sparing action

Protein

Amount *Low normal*

Qualifying factor This decreases the burden on the kidneys

The food constituents

A Normal

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate is usually better tolerated than fat

Protein

Amount Normal

Fat

Amount Normal

Minerals

Amount Increased, Calcium—1 5 grams, Phosphorus—2 grams, Iron—15 milli grams

Qualifying factor If sufficient amounts are not supplied by food, medication should be prescribed

Vitamins

Amount Increased, Vitamin A—6000 I U Thiamine—1800 micrograms, Ribo flavin—2500 micrograms, Niacin—18 milligrams, Ascorbic Acid—100 milli grams, Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluid

Amount Normal, 6 to 8 glasses

B Pernicious vomiting

Carbohydrate

Amount Increased

Qualifying factor Carbohydrate is usually better tolerated than fat It is de sirable that the patient should have a liberal glycogen reserve

Protein

Amount Normal

Fat

Amount Normal or decreased

Qualifying factor Frequently fat is not well tolerated When the carbohydrate is increased the fat may be decreased to keep the calories at the normal re quirement

Minerals

Amount Increased, Calcium—1 5 grams Phosphorus—2 grams, Iron—15 milli grams

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Vitamins

Amount Increased, Vitamin A—6000 I U Thiamine—1800 micrograms Ribo flavin—2500 micrograms, Niacin—18 milligrams, Ascorbic Acid—100 milli grams, Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluid

Amount Decreased

Qualifying factor Given in smallest possible amounts between feedings Means other than oral are sometimes used to meet the body demands

C With kidney complications

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate has a protein sparing action

Protein

Amount Low normal

Qualifying factor This decreases the burden on the kidneys

Fat

Amount Normal

Qualifying factor Fat is not so well tolerated as carbohydrate

Minerals

Amount Increased Calcium—1 5 grams, Phosphorus—2 grams, Iron—15 milligrams

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Vitamins

Amount Increased, Vitamin A—6000 I U Thiamine—1800 micrograms Riboflavin—2000 micrograms, Niacin—18 milligrams Ascorbic Acid—100 milligrams Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluids

Amount Decreased

Qualifying factor Restricted to the level of the patient's output of urine, especially in edema Some authorities force fluids

Foods

Milk—One quart daily ensures sufficient calcium and phosphorus In addition, milk provides a protein of excellent quality and easily utilized carbohydrate and fat and it is a good source of the vitamins The amount of vitamin D can be greatly increased by various methods An ounce of American cheese contains approximately the same amount of calcium and phosphorus as one cup of milk Skimmed milk or buttermilk may be used and additional butter or cream given If milk is not tolerated calcium medication must be prescribed

When protein foods which carry iron such as eggs and meat must be restricted because of kidney complications it is difficult to fulfill the iron requirement by food and medication must be prescribed

Butter fortified oleomargarine and cream contain a liberal amount of vitamin A but their fat content must be evaluated in the fulfillment of the food prescription

Vegetables and fruits provide minerals and vitamins and carbohydrate in varying amounts They are valuable also for their laxative properties

Whole grain and enriched breads and cereals provide carbohydrate as well as minerals and vitamins When the caloric value of the intake is restricted only moderate amounts of these foods can be used

Meals

The number of meals may follow the established routine of the patient provided all the foods are used that are required to fulfill the food prescription In the last two or three months of pregnancy four or five small meals are often more satisfactory in relation to appetite and digestion In cases of pernicious vomiting six or seven small meals are often better tolerated than three large ones and fluids are omitted or limited at meal time and given in small amounts between meals

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene mental and physical are especially important Emotional strain should be avoided Exercise should be taken as directed by the physician

Education of the patient

The patient should understand the extra demand upon her body for caring for the growth and development of the fetus She should understand her need for increased amounts of minerals and vitamins over the amounts supplied by the protective diet for normal needs and the adjustment of fuel foods necessary for maintenance of desired weight

She should appreciate the importance of milk as well as vegetables and fruit as carriers of calcium phosphorus and the vitamins and should be given recipes for the use of milk She should be encouraged to add new foods if needed and given lists of food equivalents for varying the diet always maintaining proper food values

The food constituents

A Normal

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate is usually better tolerated than fat

Protein

Amount Normal

Fat

Amount Normal

Minerals

Amount Increased Calcium—1 5 grams, Phosphorus—2 grams Iron—15 milli grams

Qualifying factor If sufficient amounts are not supplied by food, medication should be prescribed

Vitamins

Amount Increased Vitamin A—6000 I U Thiamine—1800 micrograms, Ribo flavin—2500 micrograms, Niacin—18 milligrams Ascorbic Acid—100 milli grams Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluid

Amount Normal, 6 to 8 glasses

B Pernicious vomiting

Carbohydrate

Amount Increased

Qualifying factor Carbohydrate is usually better tolerated than fat It is de sirable that the patient should have a liberal glycogen reserve

Protein

Amount Normal

Fat

Amount Normal or decreased

Qualifying factor Frequently fat is not well tolerated When the carbohydrate is increased the fat may be decreased to keep the calories at the normal re quirement

Minerals

Amount Increased Calcium—1 5 grams Phosphorus—2 grams Iron—15 milli grams

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Vitamins

Amount Increased Vitamin A—6000 I U Thiamine—1800 micrograms Ribo flavin—2500 micrograms, Niacin—18 milligrams Ascorbic Acid—100 milli grams, Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluid

Amount Decreased

Qualifying factor Given in smallest possible amounts between feedings Means other than oral are sometimes used to meet the body demands

C With kidney complications

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate has a protein sparing action

Protein

Amount Low normal

Qualifying factor This decreases the burden on the kidneys

Fat

Amount Normal

Qualifying factor Fat is not so well tolerated as carbohydrate

Minerals

Amount Increased Calcium—1 5 grams Phosphorus—2 grams Iron—15 milligrams

Qualifying factor If sufficient amounts are not provided by food medication should be prescribed

Vitamins

Amount Increased, Vitamin A—6000 I U , Thiamine—1800 micrograms Riboflavin—2500 micrograms Niacin—18 milligrams, Ascorbic Acid—100 milligrams Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluids

Amount Decreased

Qualifying factor Restricted to the level of the patient s output of urine, especially in edema Some authorities force fluids

ods

Milk—One quart daily ensures sufficient calcium and phosphorus In addition milk provides a protein of excellent quality and easily utilized carbohydrate and fat and it is a good source of the vitamins The amount of vitamin D can be greatly increased by various methods An ounce of American cheese contains approximately the same amount of calcium and phosphorus as one cup of milk Skimmed milk or buttermilk may be used, and additional butter or cream given If milk is not tolerated calcium medication must be prescribed

When protein foods which carry iron such as eggs and meat must be restricted because of kidney complications it is difficult to fulfill the iron requirement by food and medication must be prescribed

Butter fortified oleomargarine and cream contain a liberal amount of vitamin A, but their fat content must be evaluated in the fulfillment of the food prescription

Vegetables and fruits provide minerals and vitamins and carbohydrate in varying amounts They are valuable also for their laxative properties

Whole grain and enriched breads and cereals provide carbohydrate as well as minerals and vitamins When the caloric value of the intake is restricted only moderate amounts of these foods can be used

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vironmental factors that influence the effectiveness of the diet

Good habits of personal hygiene mental and physical are especially important Emotional strain should be avoided Exercise should be taken as directed by the physician

ucation of the patient

The patient should understand the extra demand upon her body for caring for the growth and development of the fetus She should understand her need for increased amounts of minerals and vitamins over the amounts supplied by the protective diet for normal needs and the adjustment of fuel foods necessary for maintenance of desired weight

She should appreciate the importance of milk as well as vegetables and fruit as carriers of calcium phosphorus and the vitamins and should be given recipes for the use of milk She should be encouraged to add new foods if needed and given lists of food equivalents for varying the diet always maintaining proper food values

The food constituents

- A Normal
  - *Carbohydrate*
    - Amount Normal
    - Qualifying factor Carbohydrate is usually better tolerated than fat
  - *Protein*
    - Amount Normal
  - *Fat*
    - Amount Normal
  - *Minerals*
    - Amount Increased, Calcium—1 5 grams, Phosphorus—2 grams, Iron—15 milligrams
    - Qualifying factor If sufficient amounts are not supplied by food, medication should be prescribed
  - *Vitamins*
    - Amount Increased, Vitamin A—6000 I U Thiamine—1800 micrograms, Riboflavin—2500 micrograms, Niacin—18 milligrams, Ascorbic Acid—100 milligrams, Vitamin D—400-800 I U
    - Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed
  - *Fluid*
    - Amount Normal, 6 to 8 glasses
- B Pernicious vomiting
  - *Carbohydrate*
    - Amount Increased
    - Qualifying factor Carbohydrate is usually better tolerated than fat It is desirable that the patient should have a liberal glycogen reserve
  - *Protein*
    - Amount Normal
  - *Fat*
    - Amount Normal or decreased
    - Qualifying factor Frequently fat is not well tolerated When the carbohydrate is increased the fat may be decreased to keep the calories at the normal requirement
  - *Minerals*
    - Amount Increased Calcium—1 5 grams Phosphorus—2 grams Iron—15 milligrams
    - Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed
  - *Vitamins*
    - Amount Increased, Vitamin A—6000 I U Thiamine—1800 micrograms Riboflavin—2500 micrograms, Niacin—18 milligrams Ascorbic Acid—100 milligrams, Vitamin D—400-800 I U
    - Qualifying factor If sufficient amounts are not provided by food medication should be prescribed
  - *Fluid*
    - Amount Decreased
    - Qualifying factor Given in smallest possible amounts between feedings Means other than oral are sometimes used to meet the body demands
- C With kidney complications
  - *Carbohydrate*
    - Amount Normal
    - Qualifying factor Carbohydrate has a protein sparing action
  - *Protein*
    - Amount Low normal
    - Qualifying factor This decreases the burden on the kidneys

Fat

Amount Normal

Qualifying factor Fat is not so well tolerated as carbohydrate

Minerals

Amount Increased Calcium—1 5 grams Phosphorus—2 grams Iron—15 milligrams

Qualifying factor If sufficient amounts are not provided by food medication should be prescribed

Vitamins

Amount Increased Vitamin A—6000 I U Thiamine—1800 micrograms Riboflavin—2500 micrograms Niacin—18 milligrams Ascorbic Acid—100 milligrams Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluids

Amount Decreased

Qualifying factor Restricted to the level of the patient s output of urine especially in edema Some authorities force fluids

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Milk—One quart daily ensures sufficient calcium and phosphorus In addition, milk provides a protein of excellent quality and easily utilized carbohydrate and fat and it is a good source of the vitamins The amount of vitamin D can be greatly increased by various methods An ounce of American cheese contains approximately the same amount of calcium and phosphorus as one cup of milk Skimmed milk or buttermilk may be used and additional butter or cream given If milk is not tolerated calcium medication must be prescribed

When protein foods which carry iron such as eggs and meat, must be restricted because of kidney complications it is difficult to fulfill the iron requirement by food and medication must be prescribed

Butter fortified oleomargarine and cream contain a liberal amount of vitamin A but their fat content must be evaluated in the fulfillment of the food prescription

Vegetables and fruits provide minerals and vitamins and carbohydrate in varying amounts They are valuable also for their laxative properties

Whole grain and enriched breads and cereals provide carbohydrate as well as minerals and vitamins When the caloric value of the intake is restricted only moderate amounts of these foods can be used

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The number of meals may follow the established routine of the patient provided all the foods are used that are required to fulfill the food prescription In the last two or three months of pregnancy four or five small meals are often more satisfactory in relation to appetite and digestion In cases of pernicious vomiting six or seven small meals are often better tolerated than three large ones and fluids are omitted or limited at meal time and given in small amounts between meals

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The food constituents

A Normal

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate is usually better tolerated than fat

Protein

Amount Normal

Fat

Amount Normal

Minerals

Amount Increased, Calcium—1 5 grams, Phosphorus—2 grams, Iron—15 milli grams

Qualifying factor If sufficient amounts are not supplied by food, medication should be prescribed

Vitamins

Amount Increased, Vitamin A—6000 I U Thiamine—1800 micrograms, Ribo flavin—2500 micrograms, Niacin—18 milligrams, Ascorbic Acid—100 milli grams, Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluid

Amount Normal, 6 to 8 glasses

B Pernicious vomiting

Carbohydrate

Amount Increased

Qualifying factor Carbohydrate is usually better tolerated than fat It is de sirable that the patient should have a liberal glycogen reserve

Protein

Amount Normal

Fat

Amount *Normal or decreased*

Qualifying factor Frequently fat is not well tolerated When the carbohydrate is increased the fat may be decreased to keep the calories at the normal re quirement

Minerals

Amount Increased, Calcium—1 5 grams Phosphorus—2 grams Iron—15 milli grams

Qualifying factor If sufficient amounts are not provided by food medication should be prescribed

Vitamins

Amount Increased Vitamin *A—6000 I U*, Thiamine—*1800 micrograms* Ribo flavin—2500 micrograms, Niacin—18 milligrams, Ascorbic Acid—100 milli grams, Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food medication should be prescribed

Fluid

Amount Decreased

Qualifying factor Given in smallest possible amounts between feedings Means other than oral are sometimes used to meet the body demands

C With kidney complications

Carbohydrate

Amount Normal

Qualifying factor Carbohydrate has a protein sparing action

Protein

Amount Low normal

Qualifying factor This decreases the burden on the kidneys

Fat

Amount Normal

Qualifying factor Fat is not so well tolerated as carbohydrate

Minerals

Amount Increased Calcium—1 5 grams, Phosphorus—2 grams, Iron—15 milligrams

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Vitamins

Amount Increased, Vitamin A—6000 I U Thiamine—1800 micrograms, Riboflavin—2500 micrograms Niacin—18 milligrams Ascorbic Acid—100 milligrams Vitamin D—400-800 I U

Qualifying factor If sufficient amounts are not provided by food, medication should be prescribed

Fluids

Amount Decreased

Qualifying factor Restricted to the level of the patient s output of urine especially in edema Some authorities force fluids

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Milk—One quart daily ensures sufficient calcium and phosphorus In addition, milk provides a protein of excellent quality and easily utilized carbohydrate and fat and it is a good source of the vitamins The amount of vitamin D can be greatly increased by various methods An ounce of American cheese contains approximately the same amount of calcium and phosphorus as one cup of milk Skimmed milk or buttermilk may be used, and additional butter or cream given If milk is not tolerated calcium medication must be prescribed

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The number of meals may follow the established routine of the patient provided all the foods are used that are required to fulfill the food prescription In the last two or three months of pregnancy four or five small meals are often more satisfactory in relation to appetite and digestion In cases of pernicious vomiting six or seven small meals are often better tolerated than three large ones and fluids are omitted or limited at meal time and given in small amounts between meals

ronmental factors that influence the effectiveness of the diet

Good habits of personal hygiene mental and physical are especially important Emotional strain should be avoided Exercise should be taken as directed by the physician

cation of the patient

The patient should understand the extra demand upon her body for caring for the growth and development of the fetus She should understand her need for increased amounts of minerals and vitamins over the amounts supplied by the protective diet for normal needs and the adjustment of fuel foods necessary for maintenance of desired weight

She should appreciate the importance of milk as well as vegetables and fruit as carriers of calcium phosphorus and the vitamins and should be given recipes for the use of milk She should be encouraged to add new foods if needed and given lists of food equivalents for varying the diet always maintaining proper food values

She should realize that her diet is a protection to her own health, as well as to that of the fetus and that it helps her to maintain proper weight and safeguards her from conditions of obesity, dental decay, constipation, acidosis and anemia

She should appreciate the importance of a careful hygienic regime, mental and physical, and the saving of mental and physical strain to be gained by conserving time and energy

Abnormal conditions and diseases that may be found in association with pregnancy

- *Acidosis*
- Anemia
- Avitaminosis
- Constipation
- Dental caries
- Glycosuria
- Hypertension
- Iodine deficiency
- Kidney disturbances
- Obesity
- Underweight

VITAMIN A DEFICIENCY

Dietary Outline

Body part affected Entire body in terms of growth Eyes, Skin Mucous membrane of gastro intestinal and respiratory tracts, Teeth and bones, Questionable relation to organs of reproduction and lactation

Physiology Essential for growth and health at all ages Maintains healthful condition of the skin and the mucous membrane of the gastro intestinal and respiratory tracts and thus makes them more resistant to disease Acts with calcium to build teeth Promotes normal vision, especially important for vision in dim light as it helps to restore the visual purple which is a compound of vitamin A and a protein Most of the vitamin is stored in the liver The change from carotene to vitamin A takes place in the liver

Pathological physiology Mild deficiency—Retarded growth in children, Listlessness, Lowered resistance to infection especially of the mucous membranes, Increased incidence of respiratory infection Inflammation and infection of gastro intestinal tract, Dryness and scaliness of the skin Night blindness

Extreme deficiency—Ophthalmia (xerophthalmia conjunctivitis, keratomalacia), Urinary and gall bladder calculi are still questionable, Sterility

Contributing factors Faulty food habits

- Reduction in food intake due to self directed or prescribed dietary restrictions when not supplemented by medication
- Impairment of appetite
- Food idiosyncrasies
- Inadequate income
- Lack of knowledge concerning the value of vitamin A
- Insufficient availability of food containing vitamin A
- Destruction of the vitamin by oxidation and prolonged heat in preparation and storage
- Certain factors affecting the absorption such as an excess of mineral oil, chronic diarrhea pancreatic dysfunction, celiac disease or sprue
- Lack of certain amount of fat which prevents the absorption
- Diseases of any part of the gastro intestinal tract
- Incapacity of the liver to convert carotene into vitamin A
- Chronic infections

Laboratory data Dark adaptation test

Biomicroscopic examination of conjunctivae under slit lamp illumination

Blood test for determination of the amount of vitamin A and carotene

Test for Diagnosis Diagnosis is aided by a knowledge of the diet, clinical response to vitamin A, and close clinical observation

Dietetic treatment A normal diet includes the amount of vitamin A needed as recommended by the National Research Council Committee on Food and Nutrition and is also sufficient in all the other food constituents However, when there are symptoms of vitamin A deficiency the amount should be increased by food through careful selection of foods high in vitamin A content If the deficiency is extreme, the diet cannot supply sufficient amounts and it will need to be supplemented by medication In dietetic treatment the conservation of vitamin A in food preparation and storage must be given consideration as the loss is affected by oxidation and prolonged heat

The food constituents

Carbohydrate

Amount Normal

Qualifying factor Limit carbohydrate foods low in vitamin content so that sufficient foods containing vitamin A can be used

Protein

Amount Normal

Fat

Qualifying factor Special attention should be given to choosing fats that carry vitamin A

Minerals

Amount Normal

Vitamins

Amount Increase of vitamin A Normal amount of other vitamins and an increase of the amount if other conditions require it

Qualifying factor If sufficient amounts of vitamin A are not provided by food medication should be prescribed

Foods

Milk and cheese that have the fat retained should be given in liberal amounts for their valuable contribution of vitamin A Skim milk and cottage cheese made from skim milk due to their lack of fat have no vitamin A content

Eggs should be used in any form for the vitamin A content of the yolks

Glandular organs are high in vitamin A content Muscle meats contain insignificant amounts of the vitamin

Fish liver oils furnish vitamin A in liberal amounts and for this reason are used in medication Labels on the containers should be consulted for the vitamin A content

Butter should be used liberally in the diet as it is an excellent source of vitamin A Its content of vitamin A varies in different seasons according to the feed of the animal Oleomargarine that has been fortified with sufficient amounts of vitamin A may be used in place of butter Vegetable oils and fats if not fortified are poor sources of the vitamin

Vegetables, particularly the green leafy and yellow vegetables should be used liberally as they are with certain exceptions good sources of carotene the precursor of vitamin A In conditions where the fat must be lowered lessening the vitamin A content the vegetable sources of vitamin A may be used toward the required allowance

Fruits Fresh yellow fruit such as cantaloup and peaches and the dried apricots and prunes contain valuable amounts of vitamin A Care should be taken in the preparation of fruits and vegetables that the vitamin is not lost

Cereal grains and nuts are poor sources of vitamin A

Meals

Meals may be adjusted to the established routine of the patient, or adjusted to the prescription of the doctor if related diseases exist but must provide all the vitamins necessary to fulfill the food prescription

Environmental factors that influence the effectiveness of the diet

Good habits of hygiene are important

Knowledge and consideration of food values helps to prevent the deficiency

The vitamin A content of the diet may be affected by various social factors including nationality income food outside the home preparation and choice of food, availability of food and mental attitude concerning food

Education of the patient

The patient should be taught the food values of the foods and particularly the good sources of vitamin A, the purpose of vitamin A in the body, and the amount needed

The patient should know how to plan the food for the day and the methods of buying, preparing and serving the foods to best retain the vitamin

The patient should know the food value of equivalents so that he can substitute one food for another

Attention should be called to the danger of extreme reduction of fats from the diet in an effort to lose weight

The importance of reading labels should be shown, to learn the amount of the vitamin present in foods, such as oleomargarine that has been fortified with vitamin A

Abnormal conditions and diseases that may be found in association with Vitamin A deficiency

Chronic diarrhea
Chronic infections
Constipation
Diseases of the liver
Diseases of the respiratory tract
Gastro intestinal disorders
Obesity
Other avitaminoses
Underweight

THIAMINE DEFICIENCY

Dietary Outline

Body part affected Entire body in terms of growth and carbohydrate metabolism The gastro intestinal tract, Muscles The nervous system The heart, Organs of reproduction and lactation

Physiology Part of a co enzyme system, Essential to the metabolism of carbohydrates Essential to the proper nutrition and function of the nervous and muscular systems contributing to good muscle tone Maintains and stimulates the appetite, Aids the regular bowel movement, Essential for growth reproduction and lactation

Pathological physiology Mild deficiency—Muscular weakness, Ease of fatigue, Vague generalized aches and pains Loss of weight, Disturbances of the central nervous system—fretfulness, irritability, Peripheral neuritis, Digestive disturbances—indigestion, constipation Loss of appetite, Faulty carbohydrate metabolism which produces toxicity, Circulatory disturbances

Extreme deficiency—Beri beri Polyneuritis with edema Wasting, Impaired lactation, Mental changes, Sterility is still questionable

Contributing factors Faulty food habits

Reduction in food intake due to voluntary or prescribed dietary restrictions when not supplemented by medication
Impairment of appetite
Food idiosyncrasies
Inadequate income
Lack of knowledge concerning the value of thiamine
Destruction of the vitamin through improper preparation of food
Need for daily intake as thiamine is not stored in the body
Interference with absorption due to excessive use of alcohol or alkali or to such conditions as diarrhea
High carbohydrate in the diet increasing the need of thiamine
Extensive use of refined foods that have not been enriched with thiamine

Laboratory data Estimation of thiamine in the urine by biological or chemical methods

Measurement of intermediate products of carbohydrate metabolism in blood

Test for diagnosis Diagnosis is aided by knowledge of the diet and close clinical observation

Dietetic treatment A normal diet includes the amount of thiamine needed as recommended by the National Research Council Committee on Food and Nutrition as well as sufficient of all the other food constituents However when there are symptoms of thiamine deficiency the amount should be increased through careful selection of foods high in thiamine content If the deficiency is extreme and the diet cannot supply sufficient amounts it will need to be supplemented by medication In dietetic treatment the conservation of thiamine in food preparation must be given careful consideration in view of the ease with which thiamine is affected by heat oxygen solubility in water and alkalinity

The food constituents

Carbohydrate

Amount Normal

Qualifying factor Limit carbohydrate foods low in thiamine content so that sufficient foods containing thiamine can be used

Protein

Amount Normal

Fat

Amount Normal

Minerals

Amount Normal

Vitamins

Amount Increase of thiamine Normal amount of other vitamins, and an increase of the amount if other conditions require it particularly of the vitamins that are included in the "B complex

Qualifying factor If sufficient amounts of thiamine are not provided by food medication should be prescribed

Foods

Milk should be given as in the normal diet for its important contribution to the total thiamine requirement Other dairy products—cheese and eggs—contain thiamine in moderate amounts, but as they are commonly used they aid in meeting the requirement

Meat and especially lean pork heart liver and kidney contribute relatively important amounts of thiamine to the diet

Fruits particularly the orange and banana should be used for their thiamine content

Vegetables particularly the leafy vegetables are good sources of thiamine The legumes including lentils dried peas beans and soy beans are outstanding sources of the vitamin

Breads and cereals which are whole grain or enriched with thiamine should be used in the diet

Nuts and peanut butter are also good sources of thiamine

Meals

Meals may be adjusted to the established routine of the patient, or adjusted to the prescription of the doctor if related diseases exist but must provide all the vitamins necessary to fulfill the food prescription

Environmental factors that influence the effectiveness of the diet

Good habits of hygiene are important

Knowledge and consideration of food values help to prevent the deficiency

The thiamine content of the diet may be affected by nationality income food outside the home organization of meal time preparation and choice of food availability of food and mental attitude concerning food

Education of the patient

The patient should be taught the food values of the foods and particularly the good sources of thiamine, the purpose of thiamine in the body and the amount of thiamine needed particularly in view of the relative difficulty in obtaining a diet adequate in thiamine

The patient should know how to plan the food for the day and the methods of buying, preparing and serving the foods to best retain the vitamin

The patient should know the food value of equivalents so that he can substitute one food for another This is especially important in thiamine as there is no one food to ensure the daily requirement such as is true of some other vitamins

Attention should be called to the importance of reading labels to know the amount in foods as well as in vitamin concentrates

The patient should be acquainted with the value of enriched breads and cereals

Abnormal conditions and diseases that may be found in association with thiamine deficiency

Anorexia due to physical condition
Chronic alcoholism
Chronic debilitating diseases
Diabetes
Febrile diseases
Gastro intestinal diseases
Hyperthyroidism
Other avitaminoses
Pernicious vomiting of pregnancy
Psychoneuroses

RIBOFLAVIN DEFICIENCY

Dietary Outline

Body part affected Entire body in terms of growth Body cells, Skin, Eyes Tongue

Physiology Promotes growth, Helps to keep the skin healthy, Essential for transportation of oxygen to the cells Helps eyesight, Concerned with carbohydrate metabolism, Exerts sparing action on thiamine, Part of one of the essential enzyme systems

Pathological physiology Burning and itching sensations of eyes Microscopic changes in eye as seen with slit lamp, Lesions of mucous membranes and skin Inflammation of lips, Fissures at the corner of the mouth (cheilosis), Smoothness of tongue Nervous depression, General weakness and lowering of body tone Diminished luster and loss of hair, Increased susceptibility to certain infections Expectancy of life shortened Digestive disturbances Anorexia Retardation of growth, Loss of weight

Contributing factors Faulty food habits

Reduction in food intake due to self directed or prescribed dietary restrictions when not supplemented by medication
Impairment of appetite
Food idiosyncrasies
Inadequate income
Lack of knowledge concerning the value of riboflavin
Destruction of the vitamin, as it deteriorates when exposed to sunlight
Loss of the vitamin due to solubility in water
Faulty absorption or utilization of food due to disorders of gastro intestinal tract or chronic alcoholic addiction
Increased requirement during periods of rapid growth in children during pregnancy and lactation hyperthyroidism and fevers which increase the metabolic needs

Test for diagnosis Diagnosis depends upon recognition of characteristic lesions and symptoms and is aided by a knowledge of the diet

Dietetic treatment A normal diet includes the amount of riboflavin needed as recommended by the National Research Council Committee on Food and Nutrition and is also sufficient in all the other food constituents However, when there are symptoms of riboflavin deficiency the amount should be increased by careful selection of foods high in riboflavin content If the deficiency is extreme the diet cannot supply sufficient amounts and it will need to be supplemented by medication In dietetic treatment the conservation of riboflavin in food preparation must be given consideration as the loss is affected by solubility in water and exposure to sunlight

The food constituents

Carbohydrate
Amount Normal

Protein
Amount Normal

Fat

Amount Normal

Minerals

Amount Normal

Vitamins

Amount Increase of riboflavin Normal amount of other vitamins and an increase in amount if other conditions require it particularly an increase of the vitamins that are included in the "B complex

Qualifying factor If sufficient amounts of riboflavin are not provided by food medication should be prescribed

Foods

Milk should always be included in the diet as the recommended riboflavin cannot be met by food without the amount of milk prescribed in the normal diet Cheese and eggs also give valuable contributions to the riboflavin content of the diet

Meat that is lean and particularly liver is an important source of riboflavin

Fruits that are dried are fair sources of riboflavin but fruits should be given as in the normal diet for their contribution of other food constituents

Vegetables particularly the green leafy and seed vegetables are valuable sources of riboflavin

Breads and cereals which are whole grain should be used in the diet At present only some breads and cereals are enriched with riboflavin

Meals

Meals may be adjusted to the established routine of the patient, or adjusted to the prescription of the doctor if related diseases exist but must provide all the vitamins necessary to fulfill the food prescription

Environmental factors that influence the effectiveness of the diet

Good habits of hygiene are important

Knowledge and consideration of food values help to prevent the deficiency

The riboflavin content of the diet may be affected by various social factors including nationality income food outside the home organization of meal time, preparation and choice of food availability of food and mental attitude concerning food

Education of the patient

The patient should be taught the food values of the foods and particularly the good sources of riboflavin the purpose of riboflavin in the body and the amount of riboflavin needed

The patient should know how to plan the food for the day and the methods of buying preparing and serving the foods to best retain the vitamin

The patient should know the food value of equivalents so that he can substitute one food for another

Attention should be called to the importance of reading labels to know the amount of the vitamin in foods as well as in vitamin concentrates

Abnormal conditions and diseases that may be found in association with riboflavin deficiency

Anemias

Night blindness

Other avitaminoses

Pellagra

NIACIN DEFICIENCY

Dietary Outline

Body part affected Skin Gastro intestinal tract Mucous membrane, Nervous system Other body cells

Physiology Necessary to keep tissues normal and healthy through normal cell metabolism Part of one of the essential enzyme systems

Pathological physiology Mild deficiency—Loss of appetite, Loss of weight General muscular weakness Irritability Depression, Memory loss Headache Insomnia Dermatitis Soreness and burning of mouth and tongue Functional disorders of the gastro intestinal tract, including in digestion and diarrhea

Extreme deficiency—Pellagra

Attention should be called to the importance of reading labels to know the amount in foods as well as in vitamin concentrates

The patient should be acquainted with the value of enriched breads and cereals

Abnormal conditions and diseases that may be found in association with thiamine deficiency

Anorexia due to physical condition
Chronic alcoholism
Chronic debilitating diseases
Diabetes
Febrile diseases
Gastro intestinal diseases
Hyperthyroidism
Other avitaminoses
Pernicious vomiting of pregnancy
Psychoneuroses

RIBOFLAVIN DEFICIENCY

Dietary Outline

Body part affected Entire body in terms of growth, Body cells, Skin, Eyes Tongue

Physiology Promotes growth, Helps to keep the skin healthy Essential for transportation of oxygen to the cells, Helps eyesight, Concerned with carbohydrate metabolism, Exerts sparing action on thiamine, Part of one of the essential enzyme systems

Pathological physiology Burning and itching sensations of eyes Microscopic changes in eye as seen with slit lamp, Lesions of mucous membranes and skin, Inflammation of lips, Fissures at the corner of the mouth (cheilosis), Smoothness of tongue Nervous depression General weakness and lowering of body tone Diminished luster and loss of hair, Increased susceptibility to certain infections Expectancy of life shortened Digestive disturbances Anorexia, Retardation of growth, Loss of weight

Contributing factors Faulty food habits

Reduction in food intake due to self directed or prescribed dietary restrictions when not supplemented by medication
Impairment of appetite
Food idiosyncrasies
Inadequate income
Lack of knowledge concerning the value of riboflavin
Destruction of the vitamin, as it deteriorates when exposed to sunlight
Loss of the vitamin due to solubility in water
Faulty absorption or utilization of food due to disorders of gastro intestinal tract or chronic alcoholic addiction
Increased requirement during periods of rapid growth in children during pregnancy and lactation, hyperthyroidism and fevers which increase the metabolic needs

Test for diagnosis Diagnosis depends upon recognition of characteristic lesions and symptoms and is aided by a knowledge of the diet

Dietetic treatment A normal diet includes the amount of riboflavin needed as recommended by the National Research Council Committee on Food and Nutrition and is also sufficient in all the other food constituents However when there are symptoms of riboflavin deficiency the amount should be increased by careful selection of foods high in riboflavin content If the deficiency is extreme the diet cannot supply sufficient amounts and it will need to be supplemented by medication In dietetic treatment the conservation of riboflavin in food preparation must be given consideration as the loss is affected by solubility in water and exposure to sunlight

The food constituents

Carbohydrate

Amount Normal

Protein

Amount Normal

Fat
Amount Normal
Minerals
Amount Normal
Vitamin
Amount Increase of riboflavin Normal amount of other vitamins and an increase in amount if other conditions require it particularly an increase of the vitamins that are included in the 'B complex
Qualifying factor If sufficient amounts of riboflavin are not provided by food, medication should be prescribed

Foods
Milk should always be included in the diet as the recommended riboflavin cannot be met by food without the amount of milk prescribed in the normal diet Cheese and eggs also give valuable contributions to the riboflavin content of the diet
Meat that is lean and particularly liver is an important source of riboflavin
Fruits that are dried are fair sources of riboflavin but fruits should be given as in the normal diet for their contribution of other food constituents
Vegetables particularly the green leafy and seed vegetables are valuable sources of riboflavin
Breads and cereals which are whole grain should be used in the diet At present only some breads and cereals are enriched with riboflavin

Meals
Meals may be adjusted to the established routine of the patient, or adjusted to the prescription of the doctor if related diseases exist but must provide all the vitamins necessary to fulfill the food prescription

Environmental factors that influence the effectiveness of the diet
Good habits of hygiene are important
Knowledge and consideration of food values help to prevent the deficiency
The riboflavin content of the diet may be affected by various social factors including nationality, income food outside the home organization of meal time, preparation and choice of food availability of food and mental attitude concerning food

Education of the patient
The patient should be taught the food values of the foods and particularly the good sources of riboflavin the purpose of riboflavin in the body and the amount of riboflavin needed
The patient should know how to plan the food for the day and the methods of buying preparing and serving the foods to best retain the vitamin
The patient should know the food value of equivalents so that he can substitute one food for another
Attention should be called to the importance of reading labels to know the amount of the vitamin in foods as well as in vitamin concentrates

Abnormal conditions and diseases that may be found in association with riboflavin deficiency
Anemias
Night blindness
Other avitaminoses
Pellagra

NIACIN DEFICIENCY

Dietary Outline

Body part affected Skin Gastro intestinal tract Mucous membrane Nervous system, Other body cells

Physiology Necessary to keep tissues normal and healthy through normal cell metabolism Part of one of the essential enzyme systems

Pathological physiology Mild deficiency—Loss of appetite Loss of weight General muscular weakness, Irritability Depression Memory loss Headache Insomnia Dermatitis Soreness and burning of mouth and tongue Functional disorders of the gastro intestinal tract including indigestion and diarrhea
Extreme deficiency—Pellagra

Contributing factors Faulty food habits
Reduction in food intake due to self directed or prescribed dietary restrictions when not supplemented by medication
Impairment of appetite
Food idiosyncrasies
Inadequate income
Lack of knowledge concerning the value of niacin
Insufficient availability of food containing niacin
Destruction of niacin through improper preparation of food
Diseases of the gastro intestinal tract
Alcoholism

Test for diagnosis Knowledge of the diet necessary for diagnosis Results of therapeutic trial helpful

Dietetic treatment A normal diet includes the amount of niacin needed as recommended by the National Research Council Committee on Food and Nutrition and is also sufficient in all the other food constituents However, when there are symptoms of niacin deficiency the amount should be increased through careful selection of foods high in niacin content If the deficiency is extreme the diet cannot supply sufficient amounts and it will need to be supplemented by medication *In dietetic treatment the conservation of niacin in food preparation* must be given consideration as the loss is affected by solubility in water

The food constituents

Carbohydrate
Amount Normal

Protein
Amount Normal

Fat
Amount Normal

Minerals
Amount Normal

Vitamins
Amount Increase of niacin Normal amount of other vitamins and an increase in amount if other conditions require it, particularly an increase of the vitamins that are included in the B complex"
Qualifying factor If sufficient amounts of niacin are not provided by food, medication should be prescribed

Foods

Milk, cheese and eggs should be included as in the normal diet, although of slight value to the niacin content of the diet
Meat and chicken are good sources of niacin Liver and salmon are particularly high in the vitamin
Fruits are neglible sources of niacin but should be included in the diet for their contribution of other vitamins and minerals
Vegetables, particularly the green leafy vegetables, dried beans, lentils and soy beans are valuable sources of niacin
Breads and cereals that are whole grain or enriched are good sources of niacin Yeast furnishes niacin in such liberal amounts that it is often used as medication
Peanuts and peanut butter contain niacin in significant amounts

Meals

Meals may be adjusted to the established routine of the patient or adjusted to the prescription of the doctor if related diseases exist but must provide all the vitamins necessary to fulfill the food prescription

Environmental factors that influence the effectiveness of the diet

Good habits of hygiene are important
Knowledge and consideration of food values help to prevent the deficiency
The niacin content of the diet may be affected by nationality income food outside the home organization of meal time, preparation and choice of food, availability of food and mental attitude concerning food

Education of the patient

The patient should be taught the food values of the foods and particularly the good sources of niacin the purpose of niacin in the body and the amount of niacin needed

The patient should know how to plan the food for the day and the methods of buying preparing and serving the foods to best retain the vitamin

The patient should know the food value of equivalents so that he can substitute one food for another

Attention should be called to the importance of reading labels to know the amount in foods as well as in vitamin concentrates

The patient should be acquainted with the value of enriched breads and cereals

Abnormal conditions and diseases that may be found in association with niacin deficiency

Anemia
Chronic alcoholism
Chronic diarrhea
Mental disorders
Other avitaminoses (particularly thiamine and riboflavin)
Skin infections
Stomatitis
Ulcerative colitis

ASCORBIC ACID DEFICIENCY

Dietary Outline

Body part affected Teeth and bones Gums Connective tissue Capillaries Entire body in terms of growth

Physiology Helps to build and maintain the strength of the walls of the capillaries Essential for normal development and nutrition of bones teeth and gums Essential for normal growth Essential for maintaining integrity of connective tissue

Pathological physiology Mild deficiency—Irritability Loss of appetite Failure of wound healing Indolent ulcers Vague digestive disorders Lack of stamina Lowered resistance to infections Retarded growth Various pathological conditions involving tissue metabolism Decalcification of bones and teeth Lesions of gums Development of so called rheumatism Damage to heart muscle Degeneration of muscle structure (diminished muscular power) Latent scurvy, Injury to sex organs *Hemorrhages anywhere in the body*

Extreme deficiency—Scurvy

Contributing factors Faulty food habits
Food idiosyncrasies
Inadequate income
Sensitivity to certain foods which may contribute to an inadequate ascorbic acid intake
Insufficient availability of food containing ascorbic acid
Loss of the vitamin in preparation as it is destroyed by oxidation heat alkalinity solubility and improper methods of storage and handling
Increased metabolism (such as infections and fevers) which increases the need of the vitamin
Relatively small store of ascorbic acid maintained in the body

Laboratory data *Determination of ascorbic acid excretion in urine*
Determination of ascorbic acid concentration in blood
Load or saturation test
Capillary resistance test

Test for diagnosis Radiographic studies Diagnosis is aided by a knowledge of the diet and close clinical observation

Egg yolk is of protective value in rickets in that it is a source of vitamin D as well as of calcium and phosphorus It is also rich in iron The white of the egg contains only protein and has no antirachitic value

Butter, an excellent source of vitamin A, has only a slight vitamin D content Fish liver oils are excellent sources of vitamin D, but vegetable oils, unless irradiated, do not contain it

Vegetables and fruits supply minerals and vitamins but are poor sources of vitamin D

Whole grain or enriched cereals add to the mineral content of the diet Some authorities consider that when cereals are given in too large amounts they disturb the normal metabolism of calcium

Sweets may have a place in the diet but should not be allowed to displace foods containing essential food constituents

Meals

Meals may follow the routine to which the patient is accustomed provided all the food necessary to fulfill the food prescription is taken With younger children it may be desirable to give several small meals rather than three large ones

Environmental factors that influence the effectiveness of the diet

Good habits of personal hygiene should be established

Sufficient sunlight shining directly on the bare skin of the infant and growing child, is an important factor in the prevention and treatment of rickets Sun bathing is as beneficial on the city roof as at the beach During the winter the sun bath can be given indoors at an open window The child's clothing and covering are important considerations, as the ultraviolet ray does not penetrate many kinds of material [2]

Education of the patient

The mother should be aware of the factors that are the primary causes of rickets She should appreciate the importance to childhood of giving these careful consideration and be helped so far as possible to obviate them

She should know what the ultra violet rays of sunlight are and their value to the body, and how to adapt clothing, and housing and climatic conditions to secure their beneficial effects *She should understand the interrelationship of calcium, phosphorus and vitamin D in* the development of the skeletal structure and the importance of milk as a carrier of these food constituents She should be informed concerning the vitamin D value of fish liver oils and of irradiated foods, especially milk as substitutes for sunlight or to supplement it Her understanding of these considerations should help her to appreciate the protection against rickets afforded by the protective diet with the addition of sunlight and other sources of vitamin D

Abnormal conditions and diseases that may be found in association with rickets

Anemia

Avitaminosis

Increased susceptibility to pneumonia and other infections in infants as reported by some authorities

Malnutrition

Organic or functional disturbances in adult life especially pelvic and oral bone malformation

Retarded dentition

Tetany

[2] Definite directions for sun baths are given by the Children s Bureau U S Department of Labor, Folder No 5, 1931

PART IV

TYPICAL DIETS AND MENUS

FOREWORD

In this part a series of typical diets, both normal and therapeutic, primarily for the use of the ambulatory patient, is arranged in the order followed in the Dietary Outlines (Part III) The therapeutic diets are seen to be a modification of the normal diet, constructed on the basis summarized in Part I, Chapter 3, p 29 Throughout these diets, the figures for body weight and the daily food requirements of the body are those stated in the "Summary of Body Requirements in Terms of Food Constituents" (Part I, Chapter 1, p 5) When any of the therapeutic diets are inadequate in minerals or vitamins, medication must be prescribed

The same foods are listed under each therapeutic diet They are the foods used in the normal diet computed in Part I, Chapter 2, p 13 to p 16, to fulfill the food prescription given in Part I, Chapter 1, p 5 Any change required in them to meet the needs of the various diseases can be easily observed In this way again, necessary modifications from the normal diet are emphasized This presentation will also show how the foods of the family meal can be utilized with few changes or modifications

It should be understood that these diets are *suggestive and not arbitrary* They can be varied in many ways with the help of the tables of equivalents (Tables 21–45) and the table of racial foods and food habits (Table 4)

Opposite the page of each diet will be found a meal plan and menus based on the computation of the typical diet *These again are not an arbitrary arrangement, but are to suggest* how the foods required in the diet can be prepared and utilized in meals, in various combinations The heavy meal for children is planned for noon time The menus are arranged on the basis of two levels of cost,—moderate and liberal

At the end of this part the data contained in the diets and menus are summarized

NORMAL

Typical Diet
(Adult)
Average Body Weight, 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	9[illegible]	2 0	1046	0 44	6
Cheese	2 T	30	1	7	10	0 279	0 210	0 3	450	7	185	0 06	
Egg	One	50		7	5	0 0 7	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	4 oz	1[illegible]0		20	[illegible]6	0 012	0 200	2 8		180	[illegible]40	9 44	
Cream light	½ c	120	6	4	24	0 11	0 096	0 2	1416	40	200		
Butter	6 t	30			24	0 004	0 004		810				
Mayonnaise	3 t	15	0 5		11	0 00[illegible]	0 005	0 1	30	4	10		
Fruit													
10 per cent—orange	1 m	100	11	1		0 0[illegible]4	0 018	0 4	2[illegible]5	110	50	0 [illegible]	54
15 per cent—apple	1 m	150	[illegible]1	1	1	0 011	0 018	0 8	108	60	45	0 75	9
[illegible]0 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	1[illegible]5	2[illegible]	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 0[illegible]1	0 6	1000	[illegible]5	45	0 58	2[illegible]
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	23	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	[illegible]00	38	4		0 02[illegible]	0 114	2 6	60	[illegible]00	80	2 88	20
Bread white enriched	3 sl	90	43	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
whole wheat	2 sl	60	30	6	1	0 030	0 090	1 2		19[illegible]	108	1 24	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		[illegible]6	18	0 09	
Crackers	2	8	6	1	1	0 002	0 00[illegible]	0 2					
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 018	0 126	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	2[illegible]	4	0 5	0 006	0 044	0 4		15		0 11	[illegible]
Sugar	9 t	45	45										
Jelly	5 t	40	30										
Desserts													
Cake plain	2 cu		26	2	4	0 018	0 03[illegible]	0 3	154	6[illegible]	89	0 20	
Gelatin	½ T	3		2									
Beverages													
Bouillon	1 c	[illegible]40		6									
Totals of the Food Constituents			365 5	99 5	131	1 336	1 49	17	14 350	1936	2 05	19 15	150

Total Calories 3039

NORMAL

Typical Diet

(Adult)

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange 1	Orange juice 1 orange
	Cereal	Rolled oats 1 sauce dish	Shredded wheat 1 biscuit
	Milk	Milk ¾ cup	Strawberries 10
	Cream		Cream, 4 tablespoons
	Sugar	Sugar 3 teaspoons	
	Egg (bacon if desired)	Egg soft cooked 1	Egg poached 1
	Bread or toast	Toast enriched 2 slices	Muffins, 2 small
	Butter	Butter 1 teaspoon	Butter, 1 teaspoon
	Jelly	Jelly 2 tablespoons	Marmalade, 2 tablespoons
	Beverage	Coffee	Coffee
	Cream	Cream 2 tablespoons	Cream 2 tablespoons
	Sugar	Sugar 2 teaspoons	Sugar 2 teaspoons
Noon	Main dish	Macaroni and cheese	Creamed chicken and mushrooms in macaroni ring
	Cereal or potato	Macaroni ¾ cup	Macaroni ¾ cup
	Cheese egg or milk	Cheese 2 tablespoons	Chicken diced ¼ cup
			Mushrooms, diced, 2 tablespoons
		Milk ½ cup	Milk ½ cup
		Flour 1 tablespoon	Flour 1 tablespoon
		Butter 1 teaspoon	Butter 1 teaspoon
	Vegetables cooked or in salad	Tomato and lettuce salad	Stuffed tomato salad
		Tomato 1	Tomato, 1
		Lettuce 3 leaves	Lettuce 3 leaves
			Celery chopped 2 tablespoons
		Mayonnaise 1 tablespoon	French dressing 1 tablespoon
	Bread	Bread whole wheat 2 slices	Rolls 2
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Dessert	Baked apple with cream	Apple Snow
	Fruit pudding or cake	Apple 1 medium	Apple 2 tablespoons
			Egg white ½
		Sugar 2 teaspoons	Sugar 2 teaspoons
		Cream 2 tablespoons	
	Beverage	Milk 1 glass	Milk 1 glass
Night	Soup	Bouillon	Consomme
	Crackers	Crackers 2	Crackers 2
	Meat fish or poultry	Roast beef	Planked sirloin steak
	Potato or cereal	Baked *potato 1 large*	*Parsley potato balls*
			Potato 1 large
			Parsley chopped 1 teaspoon
		Butter 1 teaspoon	Butter 1 teaspoon
	Vegetables cooked or in salad	String beans buttered, 1 sauce dish	Carrots glazed
			Carrots 1 sauce dish
		Carrots buttered 1 sauce dish	Sugar 1 teaspoon
			Butter, 1 teaspoon
		Butter for vegetables 1 *teaspoon*	Hearts of escarole
			Roquefort cheese dressing 1 tablespoon
	Bread	Bread 1 slice	Roll 1
	Butter	Butter 1 teaspoon	*Butter 1 teaspoon*
	Dessert	Fruit gelatin with cream	Milk fruit sherbet 6 heaping tablespoons
	Fruit cake pudding pastry or gelatin	Banana ½ medium	Fruit juice 4 tablespoons
		Gelatin ¼ tablespoon	
		Sugar 2 teaspoons	*Sugar 2 teaspoons*
		Cream 2 tablespoons	Milk ¼ cup
		Cake plain 1 piece	Cup cake 1
	Beverage	Coffee	Coffee
		Cream, 2 tablespoons	Cream 2 tablespoons
		Sugar 2 teaspoons	Sugar 2 teaspoons

NORMAL
Typical Diet
(Child)

Male Age, 9 Years Average Body Weght 30 Kgm

Food	Household Measure	Grams	Grams					Milli grams	I U	Micrograms		Milligrams	
			Car bohy drate	Pro-tein	Fat	Cal cium	Phos pho-rus	Iron	Vita min A	Thia mine	Ribo-flavin	Nia cin	Ascor bic Acid
Milk whole	4 c	960	48	3?	33	1 13?	0 89?	2	1844	500	209	0 88	12
Cheese	1 T	15	0 5	3 5	5	0 140	0 105	0 2	2?5	4	83	0 03	
Egg	One	50		7	5	0 027	0 112	1 5	500	75	1?5	0 03	
Meat fish or poultry	? oz	60		10	13	0 006	0 100	1 4		90	120	4 7?	
Cream													
Butter	3 t	15			12	0 00?	0 002		405				
Mayonnaise	1 t	5			4	0 001	0 002		10	1	3		
Fruit													
10 per cent—orange	1 m	100	11	1		0 0?4	0 018	0 4	?5	110	50	0 22	54
15 per cent—apple	1 m	150	21	1	t	0 011	0 018	0 6	108	60	45	0 75	9
?0 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	2?
5 per cent—lettuce	3 lvs	30	1	0 5		0 0?3	0 009		1500	23	45		5
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 sm	100	19	2		0 011	0 057	1 3	30	100	40	1 18	10
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers													
Cereals													
Oats rolled cooked	1 s d	180	18	5		0 016	0 126	1 5		219	65	0 40	
Macaroni cooked	½ c	75	11	?		0 003	0 0?2	0 2		8		0 06	
Sugar	5 t	25	25										
Jelly	3 t	20	15										
Desserts													
Cake plain	1½ cu		19 5	1 5	3	0 014	0 0?4	0 2	116	47	52	0 15	
Gelatin	¼ T	3		2									
Beverages													
Totals of the Food Constituents			?75	80 5	85 5	1 59?	1 704	13 ?	13 138	1736	3177	12 32	146

Total Calories 219

NORMAL

Typical Diet (Child)

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange, 1	Orange juice, 1 orange
	Cereal Milk Sugar	Rolled oats, 1 sauce dish Milk ¾ cup Sugar, 1 teaspoon	Shredded wheat, 1 biscuit Milk, ½ cup Sugar, 1 teaspoon Strawberries, 10
	Egg	Egg soft boiled 1	Bacon, 2 strips
	Bread Butter	Toast 1 slice Butter ½ teaspoon Jelly, 3 teaspoons	Toast 1 slice Butter, ½ teaspoon Jelly 3 teaspoons
	Milk	Milk 1 glass	Milk, 1 glass
Noon	Meat, fish or poultry	Roast beef small serving	Planked sirloin steak small serving
	Potato or cereal	Baked potato 1 small	Buttered macaroni Macaroni, ¾ cup Butter, 1 teaspoon
	Vegetables	String beans 1 sauce dish Carrots 1 sauce dish Butter ½ teaspoons	String beans 1 sauce dish Carrots 1 sauce dish Butter ½ teaspoon
	Bread Butter	Bread 1 slice Butter ½ teaspoon	Bread 1 slice Butter ½ teaspoon
	Dessert	Fruit Gelatin Banana ½ medium Gelatin ¼ tablespoon Sugar 2 teaspoons Cake, plain 1 small piece	Milk fruit sherbet, 4 heaping tablespoons Fruit juice 4 tablespoons Sugar 2 teaspoons Milk ½ cup Cup cake 1 very small
	Milk	Milk ½ cup	Milk 1 cup
Night	Main dish Cereal or potato Cheese, egg or milk	Macaroni and cheese Macaroni ⅓ cup Cheese grated, 2 tablespoons Milk ½ cup Flour, ½ tablespoon Butter 1 teaspoon	Egg in fluffy potato nest Egg yolk, 1 Egg white 1 beaten Potato 1 small combined with egg white
	Vegetables cooked or in salad	Tomato and lettuce salad Tomato 1 medium Lettuce 3 leaves	Stuffed tomato salad Tomato 1 small Lettuce 3 leaves Celery 2 tablespoons
	Salad dressing	Salad dressing 1 teaspoon	Salad dressing 1 teaspoon
	Bread Butter	Bread 1 slice Butter ½ teaspoon	Roll whole grain 1 Butter ½ teaspoon
	Fruit	Baked apple Apple 1 medium Sugar, 2 teaspoons	Apple snow Apple, 2 tablespoons Sugar 2 teaspoons Egg white ½
	Milk	Milk, 1 glass	Milk 1 glass

ALLERGY

Typical Diet
(Adult)
Average Body Weight 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
* Milk													
Cheese													
Egg													
Meat fish or poultry	6 oz	180		30	39	0 018	0 300	4 2		270	360	14 16	
Cream heavy	¾ c	160	5 5	5 5	61 5	0 128	0 10[illegible]	0 3	360[illegible]	48	2[illegible]4		
Butter	*6 t*	*30*			*24*	*0 004*	*0 004*		*810*				
Mayonnaise													
Oil	3 t	15			15								
Fruit													
10 per cent—orange	1 m	100	11	1		0 0[illegible]4	0 018	0 4	2 5	110	50	0 2	54
10 per cent—grapefruit	*½ m*	*100*	*10*	*0 5*		*0 021*	*0 020*	*0 3*	*21*	*75*	*60*	*0 1*	*40*
15 per cent—apple													
0 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	22
5 per cent—lettuce	*3 lvs*	*30*	*1*	*0 5*		*0 0[illegible]3*	*0 009*		*1500*	*23*	*45*		*5*
10 per cent—carrots													
10 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	5
Peas dried	4 T	60	37	15	1	0 046	0 46	3 6	450	316	180	0 60	
Potato white													
Potato sweet	1 m	150	42	3	0 5	0 045	0 078	1 5	5[illegible]50	135	113	1 94	30
Bread whole wheat													
Bread corn pone	6 sm cakes	60	44	5	2	0 010	0 09[illegible]	0 6	450	270	78	0 60	
Flour wheat													
Crackers													
Wheat													
Ry Krisps	6	42	30	6		0 0[illegible]4	0 168	7 2		138	36	0 66	
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 126	1 5		219	65	0 40	
Macaroni cooked													
Rice brown cooked	1 hp s d	190	23	2 5	0 5	0 0[illegible]0	0 101	0 6		68	24	[illegible] 07	
Sugar	5 t	25	25										
Jelly	3 t	[illegible]0	15										
Desserts													
Cake plain													
Gelatin	¼ T	3		2									
Beverages													
Bouillon	1 c	240		6									
Totals of the Food Constituents			285	86	146	0 455	1 343	2[illegible] 5	14 483	1847	14[illegible]8	22 39	181

Total Calories 2798

Below the normal
Forbidden foods

Typical Diet
(Adult)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange 1	
	Cereal Cream Sugar	Rolled oats 1 sauce dish Cream 2 tablespoons Sugar 1 teaspoon	Rice Krispies 1 sauce dish Cream, 2 tablespoons Sugar 1 teaspoon Strawberries, 10 large
	Bread Butter	Corn pone 2 small cakes Butter 1 teaspoon	Corn pone, 2 small cakes Butter 1 teaspoon Jelly, 2 teaspoons
	Beverage Sugar Cream	Coffee 1 cup Sugar 1 teaspoon Cream 2 tablespoons	Coffee 1 cup Sugar 1 teaspoon Cream 2 tablespoons
Noon	Soup Vegetable allowed	Pea soup Peas 4 tablespoons Water 1 cup Cream 2 teaspoons Butter 1 teaspoon	Cream of pea soup Peas 4 tablespoons Water ¾ cup Cream 1 tablespoon Butter, 1 teaspoon
	Main dish Fish small portion	Salmon loaf Salmon 4 tablespoons Rice 3 tablespoons Cream 1 teaspoon Butter 1 teaspoon	Boiled salmon with cream sauce Salmon fresh small portion Cornstarch, 1½ teaspoons Cream, 1 tablespoon Butter 1 teaspoon
	Vegetable cooked or in salad	Lettuce and tomato salad with dressing Lettuce 1 leaf Tomato 1 medium Oil allowed 1 tablespoon	Stuffed tomato with rice Tomato 1 medium Rice cooked 1 heaping sauce dish Butter 1 teaspoon
	Bread Butter	Ry Krisps 4 Butter 1 teaspoon	Ry Krisps 4 Butter 1 teaspoon
	Dessert Fruit gelatin	Fruit gelatin with cream Banana ½ medium Gelatin ½ tablespoon Sugar 1 teaspoon Cream 2 teaspoons	Fruit mousse Banana ½ medium Gelatin ½ tablespoon Sugar ½ teaspoon Whipped cream 1 tablespoon
	Beverage Sugar Cream	Tea or coffee 1 cup Sugar 1 teaspoon Cream 2 tablespoons	Tea or coffee 1 cup Sugar 1 teaspoon Cream 2 tablespoons
Night	Soup Cracker	Bouillon Ry Krisp 2	Consomme Ry Krisp 2
	Main Dish Meat or poultry average portion	Pot roast	Roast chicken
	Potato or cereal Butter	Baked sweet potato Butter ½ teaspoon	Candied sweet potato Brown sugar 1 teaspoon Butter, ½ teaspoon
	Vegetable cooked or in salad Butter	String beans 1 sauce dish Butter ½ teaspoon Grapefruit salad with whipped cream Lettuce 2 leaves Grapefruit sectioned ½ Whipped cream 1 tablespoon	String beans 1 sauce dish Butter ½ teaspoon Hearts of lettuce salad with dressing Oil allowed 1 tablespoon Lettuce 3 leaves
	Bread Butter	Corn pone 4 small cakes Butter 1 teaspoon	Corn pone 4 small cakes Butter, 1 teaspoon
	Dessert Fruit cake or ices	Rice cakes 2 Jelly, 1 tablespoon	Orange sherbet Orange juice 1 orange Sugar ½ teaspoon
	Beverage Sugar Cream	Tea or coffee Sugar 1 teaspoon Cream 2 tablespoons	Tea or coffee Sugar 1 teaspoon Cream, 2 tablespoons

ALLERGY

Typical Diet

(Child)

Male Age 9 Years Average Body Weight 30 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
* Milk													
Cheese													
Egg													
Meat fish or poultry	3 oz	90		15	19 5	0 009	0 150	2 1		135	180	7 08	
Cream heavy	½ c	160	5 5	5 5	61 5	0 128	0 101	0 3	3602	48	2[illegible]4		
Butter	6 t	30			4	0 004	0 004		810				
Mayonnaise													
Oil	1 t	5			5								
Fruit													
10 per cent—orange	1 m	100	11	1		0 0[illegible]4	0 018	0 4	225	110	50	0 2[illegible]	54
10 per cent—grapefruit	½ m	100	10	0 5		0 0[illegible]1	0 020	0 3	21	75	60	0 21	40
15 per cent—apple													
[illegible]0 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 59	2[illegible]
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	23	45		5
10 per cent—carrots													
10 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	[illegible]5	110	0 64	5
Peas dried	4 T	60	37	15	1	0 046	0 246	3 6	450	316	180	0 60	
Potato white													
Potato sweet	1 m	150	42	3	0 5	0 045	0 078	1 5	5[illegible]50	135	113	1 94	30
Bread whole wheat													
Bread corn pone	6 sm cakes	60	44	5	2	0 010	0 092	0 6	450	270	78	0 60	
Flour wheat													
Crackers													
Ry Krisps													
Wheat													
Cereals													
Oats rolled cooked	1 s d	180	18	5	[illegible]	0 016	0 126	1 5		219	65	0 40	
Macaroni cooked													
Rice brown cooked	¾ c	190	23	[illegible] 5	0 5	0 020	0 101	0 6		68	24	2 07	
Sugar	5 t	25	25										
Jelly	3 t	*20*	*15*										
Desserts													
Cake plain													
Gelatin	½ T	3		2									
Beverages													
Cocoa	2 t	6	2	1	1	0 006	0 036	0 2					
Totals of the Food Constituents			257	60	117 5	0 428	1 060	13 4	14 483	15 4	1212	14 65	181

Total Calories 23 6

Below the normal
Forbidden foods

ALLERGY
Typical Diet
(Child)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange, 1	
	Cereal	Rolled oats 1 sauce dish	Cornflakes 1 sauce dish
	Cream	Cream 2 tablespoons	Cream 1 tablespoon
	Sugar	Sugar 1 teaspoon	Sugar, 1 teaspoon
			Strawberries 10 large
	Bread	Corn pone 2 small cakes or Ry Krisps 3	Corn pone 2 small cakes
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Beverage	Cocoa 1 cup	Cocoa 1 cup
		Water ¾ cup	Water, ¾ cup
	Sugar	Sugar 1 teaspoon	Sugar 1 teaspoon
	Cream	Cream 3 tablespoons	Cream 3 tablespoons
		Cocoa 1 teaspoon	Cocoa 1 teaspoon
Noon	Main dish	Pot roast	Creamed chicken
	Meat, fish or poultry average serving		Chicken diced ⅓ cup
			Cream 1 tablespooon
			Water, 3 tablespoons
			Butter 1 teaspoon
	Potato or cereal	Baked sweet potato 1 medium	Candied sweet potato
			Sweet potato 1 medium
	Butter	Butter 1 teaspoon	Brown sugar 1 teaspoon
	Vegetable cooked or in salad	String beans 1 sauce dish	Butter ½ teaspoon
		Butter 1 teaspoon	String beans 1 sauce dish
	Bread	Corn pone 2 small cakes or Ry Krisps 3	Rice muffin 1
	Butter	Butter 1 teaspoon	Butter ½ teaspoon
	Dessert	Fruit gelatin with cream	Fruit mousse
	Fruit Gelatin	Banana ½ medium	Banana ½ medium
		Gelatin ¼ tablespoon	Gelatin ¼ tablespoon
		Sugar 2 teaspoons	Sugar 2 teaspoons
		Cream 2 tablespoons	Whipped cream 1 tablespoon
Night	Soup	Pea soup	Cream of pea soup
		Peas 4 tablespoons	Peas 4 tablespoons
		Water 1 cup	Water 1 cup
		Cream 1 teaspoon	Cream 2 teaspoons
		Butter 1 teaspoon	Butter 1 teaspoon
	Cereal allowed	Baked brown rice and tomato	Brown rice ring
		Rice 1 heaping sauce dish	Rice 1 heaping sauce dish
		Cream, 2 teaspoons	Cream 1 teaspoon
			Butter ½ teaspoon
			Grilled tomato
		Butter 1 teaspoon	Butter ½ teaspoon
		Tomato 1 medium	Tomato 1 medium
	Vegetable, cooked or in salad	Lettuce salad with dressing	Grapefruit salad
		Lettuce 3 leaves	Lettuce, 3 leaves
		Olive oil, 1 teaspoon	*Grapefruit sectioned ½*
			Whipped cream, 1 tablespoon
			Sugar 1 teaspoon
	Bread	Corn pone 2 small cakes	Ry Krisps 3
	Butter (molasses)	Jelly 3 teaspoons	Butter 1 teaspoon
	Dessert	Grapefruit cup	Jelly 1 teaspoon
	Fruit or cake	Grapefruit ½	
	Beverage	Cocoa 1 cup	Cocoa 1 cup
		Water ¾ cup	Water, ¾ cup
	Sugar	Sugar 1 teaspoon	Sugar 1 teaspoon
	Cream	Cream, 3 tablespoons	Cream 3 tablespoons
		Cocoa 1 teaspoon	Cocoa, 1 teaspoon

ALLERGY
Typical Diet
(Child)

Male Age 9 Years Average Body Weight, 30 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk													
Cheese													
Egg													
Meat fish or poultry	3 oz	90		15	19 5	0 009	0 150	2 1		135	180	7 08	
Cream heavy	¾ c	160	5 5	5 5	61 5	0 128	0 101	0 3	3602	48	2 4		
Butter	6 t	30			24	0 004	0 004		810				
Mayonnaise													
Oil	1 t	5			5								
Fruit													
10 per cent—orange	1 m	100	11	1		0 0?4	0 018	0 4	2?5	110	50	0 22	54
10 per cent—grapefruit	½ m	100	10	0 5		0 0?1	0 020	0 3	21	75	60	0 21	40
15 per cent—apple													
?0 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	2?
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	23	45		5
10 per cent—carrots													
10 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
Peas dried	4 T	60	37	15	1	0 046	0 ?46	3 6	450	316	180	0 60	
Potato white													
Potato sweet	1 m	150	4?	3	0 5	0 045	0 078	1 5	5?50	135	113	1 94	30
Bread whole wheat													
Bread corn pone	6 sm cakes	60	44	5	2	0 010	0 092	0 6	450	270	78	0 60	
Flour wheat													
Crackers													
Ry Krisps													
Wheat													
Cereals													
Oats rolled cooked	1 s d	180	18	5	?	0 016	0 126	1 5		219	65	0 40	
*Macaroni cooked													
Rice brown cooked	? c	190	23	2 5	0 5	0 020	0 101	0 6		68	24	2 07	
Sugar	5 t	25	25										
Jelly	3 t	20	15										
Desserts													
Cake plain													
Gelatin	½ T	3		2									
Beverages													
Cocoa	2 t	6	2	1	1	0 006	0 036	0 2					
Totals of the Food Constituents			257	60	117 5	0 428	1 060	13 4	14 483	1574	1212	14 65	181

Total Calories 2326

Below the normal
Forbidden foods

ALLERGY
Typical Diet
(Child)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange, 1	
	Cereal	Rolled oats 1 sauce dish	Cornflakes 1 sauce dish
	Cream	Cream 2 tablespoons	Cream 1 tablespoon
	Sugar	Sugar 1 teaspoon	Sugar, 1 teaspoon *Strawberries 10 large*
	Bread	Corn pone 2 small cakes or Ry Krisps 3	Corn pone 2 small cakes
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Beverage	Cocoa 1 cup Water ¾ cup	Cocoa 1 cup Water, ¾ cup
	Sugar	Sugar, 1 teaspoon	Sugar 1 teaspoon
	Cream	Cream 3 tablespoons Cocoa 1 teaspoon	Cream 3 tablespoons Cocoa 1 teaspoon
Noon	Main dish Meat fish or poultry average serving	Pot roast	Creamed chicken Chicken diced ⅓ cup Cream 1 tablespooon Water, 3 tablespoons Butter 1 teaspoon
	Potato or cereal	Baked sweet potato 1 medium	Candied sweet potato Sweet potato 1 medium Brown sugar 1 teaspoon
	Butter	Butter 1 teaspoon	Butter ½ teaspoon
	Vegetable cooked or in salad	String beans 1 sauce dish Butter 1 teaspoon	String beans 1 sauce dish
	Bread	Corn pone 2 small cakes or Ry Krisps 3	Rice muffin 1
	Butter	Butter 1 teaspoon	Butter ½ teaspoon
	Dessert Fruit Gelatin	Fruit gelatin with cream Banana ½ medium Gelatin ¼ tablespoon Sugar 2 teaspoons Cream 2 tablespoons	Fruit mousse Banana ½ medium Gelatin ¼ tablespoon Sugar 2 teaspoons Whipped cream 1 tablespoon
Night	Soup	Pea soup Peas 4 tablespoons Water 1 cup Cream 1 teaspoon Butter, 1 teaspoon	Cream of pea soup Peas 4 tablespoons Water 1 cup Cream 2 teaspoons Butter 1 teaspoon
	Cereal allowed	Baked brown rice and tomato Rice 1 heaping sauce dish Cream 2 teaspoons Butter, 1 teaspoon Tomato 1 medium	Brown rice ring Rice 1 heaping sauce dish Cream 1 teaspoon Butter ½ teaspoon Grilled tomato Butter ½ teaspoon Tomato 1 medium
	Vegetable, cooked or in salad	Lettuce salad with dressing Lettuce 3 leaves Olive oil, 1 teaspoon	Grapefruit salad Lettuce, 3 leaves Grapefruit sectioned ½ Whipped cream 1 tablespoon Sugar 1 teaspoon
	Bread Butter (molasses)	Corn pone 2 small cakes Jelly 3 teaspoons	Ry Krisps 3 Butter 1 teaspoon Jelly, 1 teaspoon
	Dessert Fruit or cake	Grapefruit cup Grapefruit ½	
	Beverage	*Cocoa 1 cup* Water ¾ cup	Cocoa 1 cup Water, ¾ cup
	Sugar	Sugar 1 teaspoon	Sugar 1 teaspoon
	Cream	Cream, 3 tablespoons Cocoa 1 teaspoon	Cream 3 tablespoons Cocoa, 1 teaspoon

ALLERGY

TYPICAL DIET

(CHILD)

Male Age 9 Years Average Body Weight 30 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	*Ascorbic Acid*
Milk													
Cheese													
Egg													
Meat fish or poultry	3 oz	90		15	19 5	0 009	0 150	2 1		135	180	7 08	
Cream heavy	½ c	160	5 5	5 5	61 5	0 128	0 101	0 3	360?	48	2?4		
Butter	6 t	30			4	0 004	0 004		810				
Mayonnaise													
Oil	1 t	5			5								
Fruit													
10 per cent—orange	1 m	100	11	1		0 0?4	0 018	0 4	225	110	50	0 22	54
10 per cent—grapefruit	½ m	100	10	0 5		0 0?1	0 020	0 3	21	75	60	0 21	40
15 per cent—apple													
20 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	?2
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	23	45		5
* 10 per cent—carrots													
10 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
Peas dried	4 T	60	37	15	1	0 046	0 246	3 6	450	316	180	0 60	
Potato white													
Potato sweet	1 m	150	42	3	0 5	0 045	0 0 8	1 5	5?50	135	113	1 94	30
Bread whole wheat													
Bread corn pone	6 sm cakes	60	44	5	2	0 010	0 092	0 6	450	70	78	0 60	
Flour wheat													
Crackers													
Ry Krisps													
Wheat													
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 126	1 5		219	65	0 40	
Macaroni cooked													
Rice brown cooked	¾ c	190	23	2 5	0 5	0 020	0 101	0 6		68	24	2 07	
Sugar	5 t	25	25										
Jelly	3 t	20	15										
Desserts													
Cake plain													
Gelatin	½ T	3		2									
Beverages													
Cocoa	2 t	6	2	1	1	0 006	0 036	0 2					
Totals of the Food Constituents			257	60	117 5	0 428	1 060	13 4	14 483	1574	1.12	14 65	181

Total Calories 2326

Below the normal
Forbidden foods

SPASTIC CONSTIPATION

Typical Diet

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit strained or juice Cereal refined or strained Milk Cream Sugar Egg Bread white Butter Beverage No coffee tea or cocoa, except as flavoring	Orange juice strained, 1 scant cup Rolled oats strained 1 sauce dish Cream 4 tablespoons *Sugar 2 teaspoons* Egg soft cooked, 1 Toast white 2 slices Butter 3 teaspoons Jelly 3 teaspoons Milk 1 small glass	Orange juice strained 1 scant cup Baby Ralston cooked in milk 1 sauce dish Milk, ½ glass Cream 4 tablespoons *Sugar 2 teaspoons* Egg poached 1 on Toast Toast white 2 slices Butter 2 teaspoons Jelly, 3 teaspoons Milk, flavored with coffee Milk ½ glass *Sugar 1 teaspoon* Coffee 1 tablespoon
Noon	Main dish Cereal or potato Egg, mild cheese milk chicken or fish Vegetables strained buttered scalloped souffle or in milk soup Bread white Butter Dessert *Strained fruit plain cake simple pudding or jello* Milk	Macaroni and cheese Macaroni ¾ cup Cheese grated 4 tablespoons Milk ½ cup Flour 1 tablespoon Butter, 2 teaspoons Tomato juice ½ cup scant Bread white 2 slices Butter 2 teaspoons Apple Sauce 1 sauce dish Sugar 2 teaspoons Milk 1 small glass	Creamed chicken in macaroni ring Macaroni ¾ cup Chicken diced ¼ cup Milk, ½ cup Flour, 1 tablespoon Butter 2 teaspoons Molded tomato Tomato strained 6 tablespoons Gelatin ½ tablespoon Bread white 2 slices Butter 2 teaspoons Apple snow Apple 2 tablespoons Egg white ½ Sugar 1 teaspoon Milk ½ cup
Night	Milk soup Chicken or fish Potatoes Vegetables *strained* buttered scalloped souffle or in milk soup Bread white Butter Dessert Custard, cereal puddings plain cake jello or strained fruits	 Baked haddock Baked potato 1 large *Carrots strained* String beans strained, Butter for vegetables, 3 teaspoons Bread white 1 slice Butter 2 teaspoons Fruit gelatin with cream Banana ripe, ½ medium Gelatin ½ tablespoon Sugar 2 teaspoons Cream 4 tablespoons Cake plain 1 piece	Carrot soup Carrots strained 6 tablespoons Milk ½ cup Butter, 2 teaspoons Planked haddock Buttered potato balls Potato 1 large Butter 1 teaspoon Creamed string beans String beans strained 6 tablespoons Butter 1 teaspoon Cream 1 tablespoon Toast points 1 slice white Butter 2 teaspoons Molded banana with cream Banana ripe ½ medium Gelatin ½ tablespoon Sugar 2 teaspoons Cream 3 tablespoons Cup cake 1

SPASTIC CONSTIPATION

Typical Diet

Average Body Weight, 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U.	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	9[illegible]2	250	1046	0 44	6
Cheese	2 T	30	1	7	10	0 279	0 210	0 3	450	7	165	0 06	
Egg	One	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	4 oz	120		20	26	0 012	0 200	2 8		180	240	8 44	
Cream light	½ c	120	6	4	24	0 112	0 096	0 2	1416	40	200		
Butter	12 t	60			48	0 008	0 008		1620				
Mayonnaise													
Fruit													
10 per cent—orange juice	1 sc c	200	26	1		0 048	0 036	0 8	450	[illegible]0	100	0 44	103
20 per cent—apple sauce	1 s d	100	26 5	0 5		0 005	0 009	0 3	7[illegible]	27	30		4
20 per cent—banana	1 m	100	23	1		0 008	0 0[illegible]8	0 6	350	50	75	0 61	10
Vegetables strained													
5 per cent—tomato strained	6 T	100	4	1	0 5	0 007	0 0[illegible]1	0 6	1000	75	45	0 58	[illegible]
5 per cent—string beans strained	6 T	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
10 per cent—carrot strained	6 T	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	200	38	4		0 0[illegible]	0 114	2 6	60	200	80	2 36	20
Bread white enriched	5 sl	150	80	1[illegible] 5	2 5	0 100	0 150	1 5		330	[illegible]60	1 35	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers													
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 126	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	2[illegible]	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	6 t	30	30										
Jelly	3 t	20	15										
Desserts													
Cake plain	[illegible] cu		26	2	4	0 018	0 03[illegible]	0 3	154	62	69	0 20	
Gelatin	¼ T	3		2									
Beverages													
Totals of the Food Constituents			361 5	91	14[illegible]	1 345	1 724	16 5	13 994	1951	2718	18 22	199

Total Calories 3088

COLITIS

Typical Diet

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Cereal refined or strained Milk Cream Sugar Bread white Butter Beverage no tea coffee, or cocoa except as flavoring	Cream of wheat 1 sauce dish Milk ½ cup Cream, 4 tablespoons Sugar 1 teaspoon Toast white 2 slices Butter, 3 teaspoons No tea coffee or cocoa, except as flavoring	Cream of wheat 1 sauce dish, cooked in milk Milk, ½ cup Cream 4 tablespoons Sugar, 1 teaspoon Toast white 2 slices Butter 3 teaspoons No tea coffee or cocoa except as flavoring
Mid morning	Milk Crackers white Butter	Milk ½ glass Crackers 2 Butter 1 teaspoon	Vanilla junket Milk, ½ cup Vanilla junket powder Crackers 2 Butter 1 teaspoon
Noon	Main dish Cereal or potato Cheese egg or milk Bread white Butter Dessert Custard simple puddings or plain cake	Macaroni and cheese Macaroni ¼ cup Cheese grated 4 tablespoons Milk ½ cup Flour 1 tablespoon Butter 1 teaspoon Bread white 2 slices Butter 3 teaspoons Custard Egg 1 Sugar 2 teaspoons Milk ½ cup	Macaroni and cheese Macaroni ¾ cup Cheese grated 4 tablespoons Milk ½ cup Flour 1 tablespoon Butter, 1 teaspoon Toast white 2 slices Butter 2 teaspoons Floating island Egg, 1 Sugar 1 teaspoon Milk ½ cup
Mid afternoon	Milk Crackers, white	Cornstarch pudding Cornstarch 1 tablespoon Milk ½ cup Sugar 2 teaspoons Cream 4 tablespoons Crackers 2	Molded cornstarch pudding Cornstarch 1 tablespoon Milk ½ cup Sugar 2 teaspoons Coloring Cream 2 tablespoons Crackers 2
Night	Egg or mild cheese Potato or cereal, refined Bread Butter Dessert Custard simple pudding or plain cake Milk	Egg poached 1 Baked potato 1 large Butter 2 teaspoons Bread white 2 slices Butter 2 teaspoons Cake plain, 1 piece Milk ½ glass	Eggs a la Suisse Egg 1 Cream 2 tablespoons Butter, 1 teaspoon Cheese grated 2 teaspoons on toast Baked stuffed potato Potato 1 large Milk 2 tablespoons Butter 2 teaspoons Melba toast white 2 slices Butter 1 teaspoon Cup cake 1 without frosting Milk ½ glass
Between night meal and bed time	Milk Crackers white	Milk 1 glass Crackers 2	Milk shake Milk 1 glass Sugar 1 teaspoon Vanilla Crackers 2

COLITIS**

Typical Diet

Average Body Weight 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	4 c	960	48	32	38	1 132	0 892	2	1844	500	2092	0 88	12
Cheese American	2 T	30	1	7	10	0 279	0 210	0 3	450	7	165	0 06	
Egg	Two	100		14	10	0 054	0 2?4	3	1000	150	250	0 06	
Meat fish or poultry													
Cream light	½ c	120	6	4	24	0 112	0 096	0 2	1416	40	200		
Butter	4 T	60			48	0 008	0 008		16?0				
Mayonnaise													
Fruit													
Vegetables													
Potato	1 L	200	38	4		0 022	0 114	2 6	60	200	80	2 36	20
Bread white enriched	6 sl	180	96	15	3	0 120	0 180	1 8		396	312	1 6	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers	6	36	18	3	3	0 006	0 0?4	0 6					
Cereals													
Cream of wheat cooked	1 s d	175	20 5	3 5	0 5	0 143	0 168	12		150			
Macaroni cooked	¾ c	150	2?	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	5 t	25	25										
Jelly													
Desserts													
Cake plain	? cu		26	2	4	0 018	0 032	0 3	154	6?	69	0 20	
Totals of the Food Constituents			305 5	89	141	1 901	1 999	23 3	6544	1546	3186	5 38	32

Total Calories 2847

Below the normal

When process is healing the diet is similar to the ambulatory ulcer diet #2

ULCER
Typical Diet
(Ambulatory No 1)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Cereal, refined Milk Cream Sugar Bread white Butter	Cream of wheat 1 sauce dish Milk ½ cup Cream, ¼ cup Sugar 1 teaspoon Toast white 2 slices Butter 3 teaspoons Orange juice 1 cup strained	Cream of wheat, 1 sauce dish cooked in milk Milk ½ cup Cream ¼ cup Sugar 1 teaspoon Toast white 2 slices Butter, 3 teaspoons Orange juice 1 cup strained
Mid morning	Milk and cream Crackers Butter	Milk ½ cup Cream 4 tablespoons Crackers 3 Butter 1 teaspoon	Vanilla junket with cream Milk ½ cup Junket powder vanilla Cream, 4 tablespoons Crackers 3 Butter 1 teaspoon
Noon	Main dish Cereal refined Egg mild cheese or milk Bread white Butter Dessert Custard simple pudding or plain cake Milk	Macaroni and cheese Macaroni ¾ cup Cheese grated 4 tablespoons Milk ½ cup Flour ½ tablespoon Butter, 1 teaspoon Toast white 2 slices Butter 2 teaspoons Baked custard Egg 1 Milk ½ cup Sugar 2 teaspoons Milk ½ cup	Macaroni and cheese Macaroni ¾ cup Cheese grated 4 tablespoons Milk ½ cup Flour, ½ tablespoon Butter, 1 teaspoon Toast points white 2 slices Butter, 2 teaspoons Floating Island Egg 1 Milk, ½ cup Sugar ½ teaspoon Milk, ½ cup
Mid afternoon	Milk and cream Crackers Butter	Milk ½ cup Cream 4 tablespoons Crackers 3 Butter 1 teaspoon	Milk shake Milk ½ cup Cream 4 tablespoons Sugar ½ teaspoon Vanilla Crackers 3 Butter 1 teaspoon
Night	Eggs and mild cheese Cereal refined Bread white Butter Dessert Custard simple pudding or plain cake	Eggs soft cooked 2 Butter 1 teaspoon Potato mashed Potato 1 large Cream 4 tablespoons Butter, 1 teaspoon Toast white 2 slices Butter 2 teaspoons Cake plain 1 piece	Omelet Eggs 2 Butter 1 teaspoon Creamed rice Rice 1 sauce dish Cream 2 tablespoons Butter, 1 teaspoon Toast white 2 slices Butter 2 teaspoons Charlotte Russe Lady fingers Gelatin ½ tablespoon Milk 2 tablespoons Sugar, 1 teaspoon Cream 2 tablespoons Vanilla
Between night meal and bed time	Milk	Milk 1 glass	Milk 1 glass

ULCER

Typical Diet

(Ambulatory No 1)

Average Body Weight 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	4 c	960	48	32	38	1 132	0 892	2	1844	500	2092	0 88	12
Cheese	2 T	30	1	7	10	0 279	0 210	0 3	450	7	165	0 06	
Egg	3	150		21	15	0 081	0 336	4 5	1500	275	375	0 09	
Meat fish or poultry													
Cream light	1 c	240	12	8	48	0 224	0 192	0 4	2832	80	400		
Butter	12 t	60			48	0 008	0 008		1620				
Mayonnaise													
Fruit													
10 per cent—orange juice	1 c str	200	26	1		0 048	0 036	0 8	450	220	100	0 44	108
Vegetables													
Potato	1 L	200	38	4		0 072	0 114	2 6	60	200	80	0 36	20
Bread white enriched	6 sl	180	96	15	3	0 120	0 180	1 8		396	312	1 62	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers uneeda	4	24	18	2	2	0 004	0 024	0 4					
Cereals													
Cream of wheat enriched cooked	1 s d	175	20 5	3 5	0 5	0 143	0 168	12		150			
Macaroni cooked	¾ c	150	22	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	3 t	15	15										
Jelly													
Desserts													
Cake plain	1½ cu		19 5	1 5	3	0 014	0 0 4	0 2	116	47	52	0 15	
Beverages													
Totals of the Food Constituents			321	99 5	168	2 082	2 235	25 5	8872	1866	3594	5 80	140

Total Calories 3194

Below the normal

ULCER
Typical Diet
(Ambulatory No 1)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Cereal refined Milk Cream Sugar Bread white Butter	Cream of wheat, 1 sauce dish Milk ½ cup Cream ¼ cup Sugar 1 teaspoon Toast, white, 2 slices Butter 3 teaspoons Orange juice 1 cup strained	Cream of wheat, 1 sauce dish cooked in milk Milk ½ cup Cream ¼ cup Sugar, 1 teaspoon Toast white 2 slices Butter 3 teaspoons Orange juice 1 cup strained
Mid morning	Milk and cream Crackers Butter	Milk ¾ cup Cream 4 tablespoons Crackers 3 Butter 1 teaspoon	Vanilla junket with cream Milk ½ cup Junket powder vanilla Cream, 4 tablespoons Crackers, 3 Butter 1 teaspoon
Noon	Main dish Cereal refined Egg mild cheese or milk Bread white Butter Dessert Custard simple *pudding or plain* cake Milk	Macaroni and cheese Macaroni ¾ cup Cheese grated 4 tablespoons Milk ½ cup Flour ½ tablespoon Butter, 1 teaspoon Toast white 2 slices *Butter 2 teaspoons* Baked custard Egg 1 *Milk ½ cup* Sugar 2 teaspoons Milk ½ cup	Macaroni and cheese Macaroni ¾ cup Cheese grated 4 table spoons Milk ½ cup Flour ½ tablespoon Butter 1 teaspoon Toast points white 2 slices Butter 2 *teaspoons* Floating Island Egg 1 Milk ½ cup Sugar, ½ teaspoon Milk ½ cup
Mid after noon	Milk and cream Crackers Butter	Milk ¾ cup Cream 4 tablespoons Crackers 3 Butter 1 teaspoon	Milk shake Milk ½ cup Cream 4 tablespoons Sugar ½ teaspoon *Vanilla* Crackers 3 Butter 1 teaspoon
Night	Eggs and mild cheese Cereal refined Bread white Butter Dessert Custard simple *pudding or plain* cake	Eggs soft cooked 2 Butter 1 teaspoon Potato mashed Potato 1 large Cream 4 tablespoons Butter, 1 teaspoon Toast white 2 slices Butter 2 teaspoons Cake plain 1 piece	Omelet Eggs 2 Butter 1 teaspoon Creamed rice Rice, 1 sauce dish Cream 2 tablespoons Butter, 1 teaspoon Toast white 2 slices Butter 2 teaspoons Charlotte Russe Lady fingers Gelatin ½ tablespoon Milk 2 tablespoons Sugar 1 teaspoon Cream 2 tablespoons Vanilla
Between night meal and bed time	Milk	Milk 1 glass	Milk, 1 glass

ULCER

Typical Diet

(Ambulatory No 2)

Average Body Weight, 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	4 c	960	48	3?	38	1 132	0 892	2	1844	500	209?	0 88	12
Cheese	2 T	30	1	7	10	0 279	0 210	0 3	450	7	165	0 06	
Egg	One	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	4 oz	120		20	26	0 012	0 200	2 8		180	240	9 44	
Cream light	*1 c*	*240*	*12*	*8*	*48*	*0 2?4*	*0 19?*	*0 4*	*283?*	*80*	*400*		
Butter	12 t	60			48	0 008	0 008		1820				
Mayonnaise													
Fruit													
10 per cent—orange juice	1 c str	200	26	1		0 048	0 036	0 8	450	220	100	0 44	108
15 per cent—applesauce	1 s d	100	26 5	0 5		0 005	0 009	0 3	72	27	30		4
20 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato canned	6 T str	100	4	1	0 5	0 007	0 0?1	0 3	1000	75	45	0 55	2?
10 per cent—carrots canned	6 T str	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
10 per cent—squash	8 T str	100	9	1 5	0 5	0 019	0 0?8	0 6	3000	48	81		3
Potato	1 L	00	38	4		0 0 ?	0 114	2 6	60	200	80	2 36	20
Bread white enriched	5 sl	150	80	1? 5	2 5	0 100	0 150	1 5		330	260	1 35	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers	4	24	18	?	2	0 004	0 0?4	0 4					
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 126	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	22	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	3 t	15	15										
Jelly													
Desserts													
Cake	1⅓ cu		19 5	1 5	3	0 014	0 0?4	0 2	116	47	52	0 15	
Gelatin	½ T	3		2									
Beverages													
Totals of the Food Constituents			363 5	111	186 5	1 973	2 252	16 6	18 119	2174	3881	17 64	178

Total Calories 3577

ULCER

Typical Diet

(Ambulatory No 2)

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit strained or juice Cereal refined or strained Milk Cream Sugar Egg Bread white Butter Beverage No tea coffee or cocoa except as flavoring	Orange juice strained 1 cup Rolled oats strained 1 sauce dish Milk ½ cup Cream 4 tablespoons Sugar 1 teaspoon Egg soft cooked, 1 Toast white 2 slices Butter 2 teaspoons Milk 1 small glass	Orange juice strained 1 cup Baby Ralston strained 1 sauce dish, cooked in milk Milk ½ cup Cream ½ cup Sugar 1 teaspoon Egg poached 1 Toast white 2 slices Butter 2 teaspoons Milk warm flavored with a very small amount of coffee or cocoa ¾ cup
Mid morning	Milk and cream Crackers	Milk ½ cup Cream 3 tablespoons Cracker 1	Vanilla junket with cream Milk, ½ cup Vanilla junket powder Cream 3 tablespoons Cracker toasted 1
Noon	Main dish Cereal refined or potato Egg mild cheese milk chicken or fish Vegetables strained scalloped souffle or in milk soup or buttered Bread white Butter Dessert Fruit strained, pudding plain cake or gelatin Milk	Macaroni and cheese Macaroni ½ cup Cheese, grated or cream cheese 4 tablespoons Milk ½ cup Flour 1 tablespoon Butter, 2 teaspoons Tomato juice ½ cup scant Bread or toast white 2 slices Butter 2 teaspoons Apple sauce ½ cup Sugar 1 teaspoon Milk 1 small glass	Creamed chicken in macaroni ring Macaroni ¾ cup Chicken diced ½ cup Milk ½ cup Flour 1 tablespoon Butter 1 teaspoon Molded tomato Strained tomato 6 tablespoons Gelatin ½ tablespoon Melba toast 2 slices Butter 3 teaspoons Apple Snow Apple strained 2 tablespoons Egg white ½ Sugar ½ teaspoon Milk ½ cup
Mid-afternoon	Milk and cream Crackers	Milk ½ cup Cream 3 tablespoons Cracker 1	Milk shake Milk ½ cup Cream 3 tablespoons Sugar ½ teaspoon Melba toast ½ slice
Night	Soup Chicken or fish small serving Potato baked boiled mashed or creamed Vegetables strained Bread white Butter Dessert Custard, cereal puddings plain cake Jello or strained fruits	Baked haddock Baked potato 1 large Butter 2 teaspoons Carrots strained buttered Squash strained buttered Butter 3 teaspoons Bread or toast white 1 slice Butter 1 *teaspoon* Fruit gelatin with cream Banana ripe ½ medium Gelatin ½ tablespoon Sugar 1 teaspoon Cream 3 tablespoons Cake plain 1 piece	Carrot soup Carrots strained 6 tablespoons Milk ½ cup Butter 1 teaspoon Planked halibut with buttered potato balls Halibut small serving Potato 1 large Butter 4 teaspoons String beans with cream String beans strained 6 tablespoons Cream, 1 tablespoon Toast points ½ slice of bread each Butter 1 teaspoon Molded banana with cream Banana ripe ½ medium Gelatin ½ tablespoon Sugar 1 teaspoon Cream 2 tablespoons Cup cake without frosting 1
Between night meal and bedtime	Milk and cream Crackers	Milk ½ cup Cream 3 tablespoons Crackers 2	Milk toast Milk ½ cup Cream 3 tablespoons Toast white ½ slice

UNDERWEIGHT

Typical Diet

(Adult)

Average Body Weight, 70 Kgm

Food	Household Measure	Grams	Grams					Milli grams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	3 c	720	36	24	28 5	0 849	0 669	1 5	1383	375	1569	0 66	9
Cheese	2 T	30	1	7	10	0 [illegible]9	0 210	0 3	450	7	165	0 06	
Egg	One	50		7	5	0 0?7	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	4 oz	120		20	?6	0 012	0 200	? 8		180	240	9 44	
Cream light	1 c	240	1?	8	48	0 224	0 192	0 4	283?	80	400		
Butter	15 t	75			60	0 010	0 010		20?5				
Mayonnaise	6 t	30	1		?2	0 004	0 010	0 2	60	8	20		
Fruit													
10 per cent—orange	1 m	100	11	1		0 0?4	0 018	0 4	2?5	110	50	0 2?	54
15 per cent—apple	1 m	150	21	1	1	0 011	0 018	0 6	108	60	45	0 75	9
20 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	?5	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	??
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	?3	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	200	38	4		0 022	0 114	2 6	60	?00	80	2 36	20
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Whole wheat	2 sl	60	30	6	1	0 030	0 090	1 2		19?	108	1 24	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers whole grain	2	20	15	2	2	0 004	0 040	0 4		20			
Crackers 2 square	?	8	6	1	1	0 00?	0 008	0 ?					
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 1 6	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	22	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	9 t	45	45										
Jelly	6 t	40	30										
Desserts Cake	2 cu		26	2	4	0 018	0 032	0 3	154	62	69	0 20	
Frosting	? T	30	30										
Gelatin	¼ T	7		2									
Beverages													
Bouillon	1 c	240		6									
Totals of the Food Constituents			429	113 5	13 5	1 743	119	18 2	17 472	2125	3438	19 37	153

Total Calories 409?

UNDERWEIGHT

Typical Diet

(Adult)

Meals for the Day

	Mean Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit Cereal Milk or cream Sugar Egg Bread Butter Jelly Beverage Cream Sugar	Orange 1 medium Rolled oat 1 sauce dish Cream 4 tablespoons Sugar 2 teaspoons Egg 1 Bread 2 slices Butter 4 teaspoons Jelly 1 heaping tablespoon Coffee Cream 2 tablespoons Sugar 2 teaspoons	Orange juice 1 orange Shredded wheat 1 biscuit Strawberries 1 berries Cream 4 tablespoons Sugar 1 teaspoon Egg, soft boiled 1 Muffins 2 Butter 4 teaspoons Marmalade 1 tablespoon Coffee Cream 2 tablespoons Sugar teaspoons
Mid morning	Milk Crackers	Milk ½ glass Crackers whole wheat 1 Butter 1 teaspoon	Orange junket Milk ½ cup Orange junket powder Crackers whole wheat
Noon	Main dish Cereal or potato Cheese egg or milk Vegetables cooked or in salad Bread Butter Dessert Fruit pudding or cake Milk	Macaroni and cheese Macaroni ¼ cup Cheese grated 4 tablespoons Milk ½ cup Flour 1 tablespoon Butter 1 teaspoon Tomato and lettuce salad Tomato 1 medium Lettuce 3 leaves Mayonnaise 2 tablespoons Bread whole wheat 2 slices Butter 3 teaspoons Baked apple with cream Apple 1 medium Sugar 2 teaspoons Cream, 4 tablespoons Milk ½ glass	Creamed chicken and mushrooms in macaroni ring Macaroni ¼ cup Milk ½ cup Flour 1 tablespoon Butter 1 teaspoon Chicken diced ½ cup Stuffed tomato salad Tomato 1 medium Lettuce 3 leaves Celery chopped 2 tablespoons French dressing 2 tablespoons Rolls whole wheat 2 slices Butter 3 teaspoons Apple snow with cream Apple 2 tablespoons Sugar 2 teaspoons Egg white ½ Cream 4 tablespoons Milk ½ glass
Mid-afternoon	Milk Crackers	Milk, ½ glass Crackers whole wheat 1 Butter 1 teaspoon	Milk shake Cream 4 tablespoons Milk ½ cup Sugar 1 teaspoon Flavoring as desired
Night	Soup Crackers Meat fish or poultry Potato or cereal Vegetables cooked or in salad Bread Butter Dessert Fruit cake pudding pastry or gelatin dessert Beverage	Bouillon Crackers 2 Roast beef Baked potato 1 large Butter 2 teaspoons String beans buttered Carrots buttered 1 sauce dish Butter 2 teaspoons Bread 1 slice Butter 1 teaspoon Fruit gelatin with cream Banana ½ medium Gelatin ¼ tablespoon Sugar 1 teaspoon Cream 4 tablespoons Cake with frosting 1 serving Coffee Cream 2 tablespoons Sugar 2 teaspoons	Consomme Crackers Planked sirloin steak Parsley potato balls Potato 1 large Butter 2 teaspoons Parsley chopped 1 teaspoon Carrot buttered 1 sauce dish Butter 2 teaspoons Hearts of escarole with Roquefort cheese dressing tablespoons Roll 1 Butter 1 teaspoon Milk fruit sherbet, ½ cup Fruit juice 4 tablespoons Sugar 1 teaspoon Milk ½ glass Frosted cup cake 1 Coffee Cream 2 tablespoons Sugar 2 teaspoons
Between night meal and bedtime	Milk	Milk 1 glass	Milk ½ glass

OBESITY

Typical Diet

Average Body Weight, 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U.	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	92?	250	1046	0 44	6
Cheese	1 T	15	0 5	3 5	5	0 140	0 105	0 2	2?5	4	83	0 03	
Egg	*One*	*50*		*7*	*5*	*0 027*	*0 112*	*1 5*	*500*	*75*	*125*	*0 03*	
Meat fish or poultry	4 oz	1?0		20	26	0 01	0 200	2 8		180	240	9 44	
Cream													
Butter	3 t	15			1?	0 002	0 002		405				
Mayonnaise													
Fruit													
10 per cent—orange	1 m	100	11	1		0 0?4	0 018	0 4	2?5	110	50	0 2?	54
15 per cent—apple	1 sm	100	14	0 5	0 5	0 007	0 012	0 4	72	40	30	0 50	6
20 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 0?1	0 6	1000	75	45	0 58	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—cabbage	¾ c	100	5 5	1 5		0 046	0 034	0 4	55	105	100	0 ?9	10
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	23	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 sm	100	19	2		0 011	0 057	1 3	30	100	40	1 18	10
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Flour	¼ T	2	1				0 001			6	4	0 0?	
Crackers													
Cereals													
Macaroni cooked	¾ c	75	11	2		0 003	0 0 2	0 2		8		0 06	
Sugar													
Jelly													
Desserts													
Gelatin	¼ T	3		2									
Beverages													
Bouillon	1 c	*240*		6									
Totals of the Food Constituents			168	74 5	70	1 04	1 2?8	12	1? 109	1374	2?02	16 02	207

Total Calories 1600

Below the normal

Typical Diet

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange 1 medium	Orange juice 1 orange
	Egg	Egg soft cooked, 1	Egg poached, 1
	Bread or cereal	Bread 1 slice	Muffin, 1 small
	Butter	Butter, ½ teaspoon	Butter, ½ teaspoon
	Beverage	Coffee	Coffee
	Milk	Milk, 2 tablespoons	Milk, 2 tablespoons
	No sugar	Milk 1 small glass	Milk, 1 small glass
Noon	Main dish Vegetables Meat egg or cheese	Macaroni and cheese very small serving Macaroni ¾ cup Cheese grated, 2 tablespoons Milk, ¼ cup Flour ½ tablespoon Butter ½ teaspoon	Celery soup Celery ¼ cup Milk ¼ cup Broth, ¼ cup Creamed chicken and mushrooms in macaroni ring 1 small serving Macaroni, ¾ cup Chicken ¼ cup diced Mushrooms diced 1 tablespoon Milk, ¼ cup Flour, ½ tablespoon Butter, ½ teaspoon
	Vegetables cooked or in salad Mineral oil dressing if desired	Tomato and lettuce salad Tomato 1 medium Lettuce 3 leaves Cabbage steamed or raw	Stuffed tomato salad Tomato 1 medium Lettuce, 3 leaves Celery 2 tablespoons
	Bread Butter	Bread 1 slice Butter ½ teaspoon	Roll 1 small Butter, ½ teaspoon
	Dessert Fruit	Baked apple 1 small	Apple rings Apple, 1 small
	Beverage No sugar	Milk 1 small glass Tea or coffee	Milk, 1 small glass Tea or coffee
Night	Clear soup	Bouillon	Consomme
	Meat fish or poultry lean	Roast beef	Planked sirloin steak
	Potato or cereal	Baked potato 1 small Butter ½ teaspoon	Parsley potato balls Potato 1 small Chopped parsley 1 teaspoon Butter ½ teaspoon
	Vegetables cooked or in salad	Carrots steamed 1 sauce dish String beans 1 sauce dish Butter ½ teaspoon	Carrots glazed, small serving Carrots Butter, ½ teaspoon Hearts of escarole
	Bread Butter	Bread 1 slice Butter ½ teaspoon	Roll 1 small Butter, ½ teaspoon
	Dessert Fresh fruit	Fruit gelatin Banana sliced ½ medium Milk 2 tablespoons Gelatin ¼ tablespoon	Baked banana ½ small Lemon juice 1 teaspoon
	Beverage No sugar	Tea or coffee	Tea or coffee

DIABETES

Typical Diet

(Normal Fat)

Average Body Weight 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	922	250	1046	0 44	6
Cheese	2 T	30	1	7	10	0 279	0 210	0 3	450	7	165	0 06	
Egg	One	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	4 oz	120		20	26	0 012	0 00	2 8		180	240	9 44	
Cream light	½ c	60	3	2	12	0 056	0 048	0 1	708	20	100		
Butter	3 t	15			1?	0 00?	0 002		405				
Mayonnaise													
Fruit													
10 per cent—orange	1 m	100	11	1		0 0 4	0 018	0 4	2 5	110	50	0 2?	54
15 per cent—apple	½ m	75	10 5	0 5	0 5	0 005	0 009	0 3	54	30	23	0 8	5
?0 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 0?1	0 6	1000	75	45	0 58	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	lvs	30	1	0 5		0 0?3	0 009		1500	23	43		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	*1 sm*	100	*19*	*2*		*0 011*	*0 057*	*1 3*	*30*	*100*	*40*	*1 18*	*10*
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Flour	½ T	2	1				0 001			6	4	0 02	
Crackers													
Cereals													
Macaroni cooked	¾ c	75	11	2		0 003	0 02?	0 2		8		0 06	
Sugar													
Jelly													
Desserts													
Gelatin	½ T	3		2									
Beverages													
Bouillon	1 c	240		6									
Totals of the Food Constituents			162 5	78 5	87	1 189	1 344	11 7	12 969	128 *	2?77	15 64	136

Total Calories 1747

* Below the normal

Typical Diet
(Normal Fat)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange juice 1 orange	Orange juice, 1 orange
	Cereal Milk No sugar		
	Egg	Egg soft cooked 1	Egg dropped 1, on
	Bread Butter	Toast, 1 slice Butter, ½ teaspoon	Toast, 1 slice Butter, ½ teaspoon
	Beverage No sugar	Coffee Cream, 2 tablespoons	Coffee Cream, 2 tablespoons
Noon	Main dish Cereal or potato Cheese egg or milk	Macaroni and cheese Macaroni ¼ cup Cheese grated 4 tablespoons Milk ⅓ cup Flour ½ tablespoon Butter ½ teaspoon	Creamed chicken and mushrooms in macaroni ring Macaroni ¾ cup Chicken diced, ¼ cup Mushrooms diced, 2 tablespoons Milk, ⅓ cup Flour ½ tablespoon Butter, ½ teaspoon
	Vegetables cooked or in salad	Tomato and lettuce salad Tomato 1 medium Lettuce, 3 leaves Mineral oil dressing	Stuffed tomato salad Tomato 1 medium Lettuce 3 leaves Celery 2 tablespoons Mineral oil dressing
	Bread Butter	Bread, 1 slice Butter ½ teaspoon	Rolls, 1 Butter ½ teaspoon
	Fruit	Baked apple ½ medium Milk ½ cup Milk 1 glass	Raw apple rings Apple 1 medium Milk 1½ glasses
Night	Soup, fat free Crackers	Bouillon	Consomme
	Meat fish, or poultry lean	Roast beef	Planked sirloin steak
	Potato	Baked potato 1 small Butter ½ teaspoon	Parsley potato balls Potato, 1 small Parsley chopped 1 teaspoon Butter ½ teaspoon
	Vegetables cooked or in salad	String beans Carrots steamed Butter for vegetables, ½ teaspoon	Carrots steamed Hearts of escarole Mineral oil dressing
	Bread Butter	Bread 1 slice Butter, ½ teaspoon	Roll, 1 Butter ½ teaspoon
	Dessert Fruit gelatin with saccharine	Fruit gelatin Banana ½ medium Gelatin ¼ tablespoon	Fruit gelatin Banana ½ medium Gelatin ¼ tablespoon
	Beverage No sugar	Coffee Cream 2 tablespoons	Coffee Cream 2 tablespoons

DIABETES

Typical Diet
(High Normal Fat)
Average Body Weight, 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	9[illegible]2	250	1046	0 44	6
Cheese	2 T	30	1	7	10	0 [illegible]79	0 210	0 3	450	7	165	0 06	
Egg	One	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	4 oz	1[illegible]0		20	26	0 012	0 200	2 8		180	240	9 44	
Cream light	½ c	120	6	4	24	0 112	0 096	0 2	1416	40	200		
Butter	6 t	30			24	0 004	0 004		810				
Mayonnaise	6 t	30	1		*	0 004	0 010	0 2	60	8	20		
Fruit													
10 per cent—orange	1 m	100	11	1		0 024	0 018	0 4	225	110	50	0 2[illegible]	54
15 per cent—apple	¾ m	75	10 5	0 5	0 5	0 005	0 009	0 3	54	30	23	0 38	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 53	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	23	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato													
Bread white enriched	1 sl	30	16	2 5	0 5	0 020	0 030	0 3		66	52	0 27	
Flour	½ T	2	1				0 001			6	4	0 02	
Crackers													
Cereals													
Macaroni cooked	½ c	75	11	2		0 003	0 022	0 2		8		0 06	
Sugar													
Jelly													
Desserts													
Gelatin	½ T	3		2									
Beverages													
Bouillon	1 c	240		6									
Totals of the Food Constituents			103 5	73	132	1 196	1 273	9 8	13 937	1053	2[illegible]15	13 61	1[illegible]1

Total Calories 1894

* Below the normal

DIABETES

Typical Diet
(High Normal Fat)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit Eggs or bacon Bread Butter Beverage Cream No sugar	Orange 1 Egg soft cooked 1 Butter 1 teaspoon Bread or toast ½ slice Butter, 1 teaspoon Coffee Cream 2 tablespoons	Orange juice, 1 orange Egg, poached, 1 Toast ½ slice Butter 1 teaspoon Coffee Cream, 2 tablespoons
Noon	Main dish Egg meat or cheese Cereal or potato Vegetables cooked or in salad Bread Butter Dessert Fruit No sugar Beverage	Macaroni and cheese very small serving Cheese grated 2 tablespoons Macaroni ⅓ cup Milk, ⅓ cup Flour ½ tablespoon Butter 1 teaspoon Tomato and lettuce salad Tomato 1 Lettuce 3 leaves Mayonnaise 2 tablespoons Bread ½ slice ½" thick Butter 1 teaspoon Baked apple with cream Apple ½ medium Cream 4 tablespoons Milk 1½ glasses	Creamed chicken and mushrooms in macaroni ring very small serving Chicken, diced, ¼ cup Macaroni, ⅓ cup Milk ⅓ cup Flour, ½ tablespoon Butter 1 teaspoon Mushrooms diced, 1 tablespoon Stuffed tomato salad Tomato 1 Lettuce 3 leaves Celery chopped 2 tablespoons French dressing 2 tablespoons Roll whole grain ½ roll Butter 1 teaspoon Apple whip Apple ½ medium strained Cream, whipped 4 tablespoons Saccharine to taste Milk 1½ glasses
Night	Soup Meat fish or poultry Vegetables Dessert Fruit or combinations of fruit and cream, gelatin sweetened with saccharine Beverage No sugar	Bouillon Roast beef String beans buttered Carrots buttered Butter for vegetables, 2 teaspoons Gelatin with cream Gelatin ½ tablespoon Saccharine Cream 2 tablespoons Coffee	Consomme Planked sirloin steak String beans buttered Butter 2 teaspoons Hearts of escarole with Roquefort cheese Gelatin with cream Gelatin ½ tablespoon Saccharine Cream, 2 tablespoons Coffee

DIABETES

Typical Diet

(Child)

Male Age 9 Years Average Body Weight 30 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U.	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	4 c	960	48	32	38	1 13?	0 89?	2	1844	500	09?	0 88	12
Cheese	1 T	15	0 5	3 5	5	0 140	0 105	0 2	225	4	83	0 03	
Egg	One	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	2 oz	60		10	13	0 006	0 100	1 4		90	1?0	4 72	
Cream													
Butter	3 t	15			12	0 00?	0 002		405				
Mayonnaise	1 t	5			4	0 001	0 002		10	1	3		
Fruit													
10 per cent—orange	2 m	200	22	2		0 048	0 036	0 8	450	2 0	100	0 44	108
15 per cent—apple	1 m	150	21	1	1	0 011	0 018	0 6	108	60	45	0 75	9
20 per cent—banana	*1 L*	*150*	*36*	*1 5*		*0 01?*	*0 042*	*0 9*	*5?5*	*75*	*114*	*0 93*	*15*
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	23
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	23	45		5
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 sm	100	19	2		0 011	0 057	1 3	30	100	40	1 18	10
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Flour	½ T	4	2 5			0 001	0 004	0 1		13	9	0 05	
Crackers													
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 1?6	1 5		219	65	0 40	
Macaroni cooked	½ c	75	11	2		0 003	0 0 2	0 2		8		0 06	
Sugar													
Jelly													
Dessert													
Gelatin	½ T	3		2									
Beverages													
Totals of the Food Constituents			248	80 5	8 5	1 610	1 723	14	13 597	1836	3242	12 97	210

Total Calories 2057

DIABETES

Typical Diet

(Child)

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Oranges 2	Orange juice 2 oranges
	Cereal Milk	Rolled oats 1 sauce dish Milk ½ cup	Shredded wheat, 1 biscuit Milk, ½ cup Strawberries 10 berries
	Egg	Egg soft cooked 1	Bacon 2 strips
	Bread Butter	Toast 1 slice Butter, ½ teaspoon	Toast, 1 slice Butter ½ teaspoon
	Milk	Milk 1 glass	Milk 1 glass
Noon	Meat, fish or poultry, small serving	Roast beef	Planked sirloin steak
	Potato or cereal	Baked potato 1 small Butter ½ teaspoon	Parsley potato balls Potato, 1 small Parsley, 1 teaspoon chopped Butter ½ teaspoon
	Vegetables	String beans Carrots buttered Butter ½ teaspoon	String beans Carrots buttered Butter, ½ teaspoon
	Bread Butter	Bread 1 slice Butter ½ teaspoon	Bread 1 slice Butter ½ teaspoon
	Dessert Fruit or gelatin dessert without sugar	Fruit gelatin Banana 1 large Gelatin ½ tablespoon	Baked banana with lemon juice
		Milk 1 glass	Milk 1 glass
Night	Main dish Cereal or potato Cheese, egg or meat	Macaroni and cheese Macaroni ¾ cup Cheese grated 2 tablespoons Milk ½ cup Flour ½ tablespoon Butter ½ teaspoon	Creamed chicken and mushrooms in macaroni ring Macaroni ¾ cup Chicken diced ½ cup Mushrooms diced 2 tablespoons Milk, ½ cup Flour ½ tablespoon Butter ½ teaspoon
	Vegetables cooked or in salad Salad dressing	Tomato and lettuce salad Tomato 1 medium Lettuce, 3 leaves Salad dressing 1 teaspoon	Stuffed tomato salad Tomato 1 small Lettuce 3 leaves Celery 2 tablespoons Salad dressing 1 teaspoon
	Bread Butter	Bread, 1 slice Butter ½ teaspoon	Roll 1 Butter ½ teaspoon
	Fruit No sugar	Baked apple Apple 1 medium	Baked apple Apple 1 medium
	Milk	Milk 1 glass	Milk 1 glass

LIVER DISORDER

Typical Diet

(Chronic)

Average Body Weight, 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	922	250	1046	0 44	6
Cheese cottage	2 T	30	1	6		0 025	0 079	0 3	53		84		
Egg	One	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	8 oz lean	240		52	20	0 032	0 488	7 2		384	55	17 84	
Cream													
Butter	t	10			6								
Mayonnaise													
Fruit													
10 per cent—orange	1 m	100	11	1		0 024	0 018	0 4	225	110	50	0 2	54
15 per cent—apple	1 m	150	21	1	1	0 011	0 018	0 6	108	60	45	0 75	9
20 per cent—banana	1 m	100	24	1		0 008	0 028	0 6	350	50	76	0 6	10
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 0 1	0 6	1000	75	45	0 58	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	5
5 per cent—lettuce	3 lvs	30	1	0 5		0 0 3	0 009		1500	23	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	200	38	4		0 0 2	0 114	2 6	60	200	80	2 36	20
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
whole wheat	2 1	60	30	6	1	0 030	0 090	1 2		192	108	1 24	
Flour	*1 T*	*7*	*5*	*0 5*		*0 001*	*0 007*	*0 1*		26	18	0 09	
Crackers	2	8	6	1	1	0 00	0 008	0 2					
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 126	1 5		219	65	0 40	
Macaroni cooked	½ c	150	22	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	4 T	60	60										
Jelly	8 T	160	120										
Desserts													
Cake plain	2 cu		26	2	4	0 018	0 032	0 3	154	62	69	0 20	
Gelatin	¼ T	3		2									
Bouillon	1 c	240		6									
Totals of the Food Constituents			476	127	62	0 988	1 815	21 4	11 872	2114	2764	27 80	155

Total Calories 2970

Below the normal

LIVER DISORDER*

Typical Diet
(Chronic)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit Cereal Milk Sugar Egg Bread or toast Butter Jelly Milk	Orange 1 medium Rolled oats 1 sauce dish Milk ¾ cup Sugar 3 teaspoons Egg soft cooked 1 Toast 2 slices Butter ½ teaspoon Jelly, 2 heaping table spoons Milk whole ¾ glass	Orange juice, 1 orange Shredded wheat, 1 biscuit Strawberries, 10 Milk, ½ cup Egg poached 1 Muffins, 2 small Butter ½ teaspoon Marmalade, 1 tablespoon Milk whole 1 glass
Noon	Meat fish or poultry Cereal or potato Vegetables cooked or in salad Bread Butter Jelly or jam Dessert Fruit Milk	Cold meat Macaroni, boiled Macaroni ¾ cup Tomato sauce ½ cup Flour 1 tablespoon Cottage cheese salad Lettuce 3 leaves Cottage cheese 2 table spoons Bread 2 slices Butter ½ teaspoon Jelly 2 heaping table spoons Baked apple Apple 1 medium Sugar 1 tablespoon Milk whole 1 glass	Cold sliced chicken Baked macaroni Macaroni, ¾ cup Tomato sauce ½ cup Bread crumbs 3 table spoons Cottage cheese salad Lettuce, 3 leaves Cottage cheese 2 table spoons Rolls 2 Butter ½ teaspoon Marmalade 2 heaping tablespoons Stuffed baked apple Apple 1 medium Sugar 2 teaspoons Raisins 2 teaspoons Milk whole, 1 glass
Night	Soup Crackers Meat fish or poultry Potato or cereal Vegetables cooked or in salad Bread Butter Jelly Dessert Fruit cake pudding pastry, or gelatin	Bouillon Crackers 2 Roast beef lean Baked potato 1 large String beans buttered 1 sauce dish Carrots buttered 1 sauce dish Butter for vegetables ½ teaspoon Bread 1 slice Butter ½ teaspoon Jelly 1 heaping table spoon Fruit gelatin Banana 1 medium Gelatin ½ tablespoon Sugar, 3 teaspoons Cake plain 1 piece	Consomme Crackers 2 Planked sirloin steak lean Parsley potato balls Potato 1 large Parsley chopped 1 tea spoon Carrots glazed Carrots 1 sauce dish Sugar 1 teaspoon Butter ½ teaspoon Hearts of escarole Roll 1 Butter ½ teaspoon Jelly 1 heaping table spoon Jellied fruit cup Banana 1 medium Gelatin ½ tablespoon Sugar 2 teaspoons Frosted cup cake 1

* Some of the carbohydrate foods may be used in intermediate feedings instead of at meal time

LIVER DISORDER

Typical Diet

(Acute)

Average Body Weight 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	9 [illegible]	250	1046	0 44	6
Cheese													
Egg	One	50		7	5	0 0[illegible]7	0 11[illegible]	1 5	500	[illegible]	125	0 03	
Meat fish or poultry	4 oz lean	120		26	10	0 016	0 244	3 6		19[illegible]	276	8 9[illegible]	
Cream													
Butter	3 t	15			12	0 00[illegible]	0 00[illegible]	0 1	405				
Mayonnaise													
Fruit													
10 per cent—orange	1 m	100	11	1		0 0[illegible]4	0 018	0 4	[illegible]5	110	50	0 22	54
15 per cent—apple	1 m	150	21	1	1	0 011	0 018	0 6	108	60	45	0 75	9
[illegible]0 per cent—banana	1 m	100	24	1		0 008	0 0 8	0 6	350	50	76	0 6[illegible]	10
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	[illegible]5	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 0[illegible]3	0 009		1500	[illegible]3	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	[illegible]00	38	4		0 0[illegible]2	0 114	2 6	60	200	80	2 36	20
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
whole wheat	2 sl	60	30	6	1	0 030	0 090	1 2		19[illegible]	108	1 24	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers	2	8	6	1	1	0 00	0 008	0 2					
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 1 6	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	2[illegible]	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	4 T	60	60										
Jelly	8 T	160	1[illegible]0										
Desserts													
Cake plain	2 cu		26	2	4	0 018	0 032	0 3	154	62	69	0 20	
Gelatin	¾ T	3		2									
Bouillon	1 c	240		6									
Totals of the Food Constituents			475	95	58	0 949	1 494	17 5	12 224	192	2404	18 88	155

Total Calories 28[illegible]

Below the normal

LIVER DISORDER*

Typical Diet

(Acute)

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange 1 medium	Orange juice, 1 orange
	Cereal	Rolled oats 1 sauce dish	Shredded wheat 1 biscuit
	Sugar	Milk ½ cup	Strawberries, 10
	Milk	Sugar 3 teaspoons	Milk, ½ cup
	Bread	Bread or toast 2 slices	Muffin 2 medium
	Butter	Butter ½ teaspoon	Butter, ½ teaspoon
	Jelly	Jelly, 2 heaping tablespoons	Jelly, 1 heaping tablespoon
	Milk	Milk whole ½ glass	
Noon	Main dish	Macaroni boiled	Creamed chicken and mushrooms in macaroni ring
	Cereal	Macaroni ¾ cup	Macaroni ¾ cup
	Vegetables	Tomato sauce ½ cup	Chicken diced, ½ cup
		Flour 1 tablespoon	Mushrooms diced, 2 tablespoons
			Milk ½ cup
			Flour 1 tablespoon
			Butter ½ teaspoon
	Vegetables cooked or in salad	Lettuce salad with egg	Tomato and lettuce salad
		Lettuce 3 leaves	Tomato, 1
		Egg hard cooked 1	Lettuce 3 leaves
	Bread	Bread 2 slices	Rolls 2
	Butter	Butter 1 teaspoon	Butter ½ teaspoon
	Jelly	Jelly 2 heaping tablespoons	Marmalade 2 heaping tablespoons
	Dessert	Baked apple	Stuffed baked apple
	Fruit	Apple 1 medium	Apple 1 medium
		Sugar 2 tablespoons	Sugar 3 teaspoons
			Raisins 2 teaspoons
	Milk	Milk whole 1 glass	Milk whole 1 glass
Night	Soup	Bouillon	Consomme
	Crackers	Crackers 2	Crackers 2
	Meat fish or poultry	Roast beef lean	Planked sirloin steak lean
	Potato or cereal	Baked potato 1 large	Parsley potato balls
			Potato 1 large
			Parsley, chopped 1 teaspoon
			Butter ½ teaspoon
	Vegetables cooked or in salad	String beans buttered 1 sauce dish	Carrots glazed
		Carrots buttered 1 sauce dish	Carrots 1 sauce dish
		Butter for vegetables 1 teaspoon	Sugar 1 teaspoon
			Butter ½ teaspoon
			Hearts of escarole
	Bread	Bread 1 slice	Roll 1
	Butter	Butter 1 teaspoon	Butter ½ teaspoon
	Jelly	Jelly 1 heaping tablespoon	Marmalade 1 heaping tablespoon
	Dessert	Fruit gelatin	Jellied fruit cup
	Fruit cake	Banana 1 medium	Banana 1 medium
		Gelatin ½ tablespoon	Gelatin ½ tablespoon
		Sugar, 3 teaspoons	Sugar 3 teaspoons
		Cake plain 1 piece	Cup cake 1

* Some of the carbohydrate foods may be used in intermediate feedings instead of at meal time

KETOGENIC DIET**

Typical Diet

(Child)

Ratio 3 1 (Protein—2 Grams per Kilogram) Male 6 Years Average Weight 18 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk													
Cheese	1 oz	30	1	7	10	0 279	0 210	0 3	450	7	165	0 06	
Egg	One	50		7	5	0 0?7	0 112	1 5	500	75	1?5	0 03	
Meat medium fat	1 oz	30		5	6 5	0 003	0 050	0 7		45	60	2 36	
Cream heavy	1 c	240	8	8	9?	0 192	0 152	0 4	5404	72	336		
Butter	12 t	60			48	0 008	0 008		16?0				
Oil	4 t	20			20								
Fruit													
10 per cent—orange	1 m	100	11	1		0 024	0 018	0 4	225	110	50	0 22	54
Vegetables													
5 per cent—tomato fresh	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	2?
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—cabbage	1 s d	100	5 5	1 5		0 046	0 034	0 4	55	105	100	0 29	70
5 per cent—lettuce	¼ head	100	3	1		0 017	0 040	0 5	100	75	45	0 50	15
Potato													
Bread													
Flour													
Crackers													
Cereals													
Oats rolled cooked													
Macaroni cooked													
Sugar													
Jelly													
Desserts													
Cake													
Gelatin													
Beverages													
Totals of the Food Constituents			40	34	18?	0 668	0 689	6 2	10 354	639	1036	4 68	186

Total Calories 1934

* Below the normal
Used in certain types of epilepsy

KETOGENIC DIET
(CHILD)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit Egg Butter Cream heavy	Orange 1 Egg soft cooked, 1 Butter 1 tablespoon Cream, heavy, 4 table spoons	Orange juice 1 orange Scrambled egg Egg 1 Cream, heavy, 1 table spoon Butter, 1 tablespoon Cream heavy, 3 table-spoons
Noon	Meat, fish or poultry Vegetables, cooked or in salad Butter Oil Cream heavy	Roast beef, very small serving String beans buttered Butter, 2 tablespoons Lettuce ¼ head with French dressing Oil, 2 teaspoons Cream heavy ⅓ cup	Chicken salad Chicken, diced, 1 ounce Lettuce, ¼ head, chopped Oil, 2 teaspoons String beans buttered Butter, 1 tablespoon Mousse Cream, heavy, ⅓ cup Vanilla Saccharine
Night	Cheese Vegetables, cooked or in salad Oil Cream heavy	Cheese, 1 ounce Cabbage buttered 1 sauce dish Butter, 1 tablespoon Tomato with French dressing Tomato, 1 Oil 2 teaspoons Cream heavy, 4 table spoons	Cabbage au Gratin Cabbage, 1 sauce dish Cream, 1 tablespoon Butter, 2 tablespoons Cheese grated, 4 table spoons Tomato salad with French dressing Tomato, 1 medium Oil, 2 teaspoons Ivory cream Heavy cream 3 table-spoons Saccharine Agar Vanilla

Note The addition of fish liver and other oils to the diet increases the fat intake

NEPHRITIS

Typical Diet
(Low Protein)
Average Body Weight 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	¾ c	170	6	4	5	0 141	0 111	0 3	231	63	26?	0 11	1
Cheese													
Egg	One	50		7	5	0 0?7	0 11?	1 5	500	75	1 5	0 03	
Meat fish or poultry	2 oz	60		10	13	0 006	0 100	1 4		90	120	4 72	
Cream heavy	1 c	240	8	8	9?	0 19?	0 152	0 4	5404	72	338		
Butter	6 t	30			24	0 004	0 004		810				
Mayonnaise	3 t	15	0 5		11	0 002	0 005	0 1	30	4	10		
Other fats													
Fruit													
10 per cent—orange	2 m	200	2?	2		0 048	0 036	0 8	450	2 0	100	0 44	108
15 per cent—apple	1 L	200	28	1	1	0 014	0 024	0 8	144	80	60	1	1?
?0 per cent—banana	1 m	100	23	1		0 008	0 028	0 6	350	50	75	0 61	10
Dried prunes	3 m	30	21 5	0 5		0 018	0 0?4	0 9	420	60	105		
Vegetables													
5 per cent—tomato	*1 m*	*100*	*4*	*1*	*0 5*	*0 007*	*0 0?1*	*0 8*	*1000*	*75*	*45*	*0 59*	*2?*
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 0-3	0 009		1500	23	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	200	38	4		0 0 ?	0 114	2 6	60	200	80	2 36	20
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers													
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 1?6	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	2?	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	9 t	45	45										
Jelly	9 t	45	45										
Desserts													
Beverages													
Totals of the Food Constituents			352	59 5	156	0 705	1 092	14 9	17 899	1545	130	13 37	207

Total Calories 3050

Below the normal

NEPHRITIS

Typical Diet
(Low Protein)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange juice 2 oranges Prunes 3 medium Sugar 1 teaspoon	Orange juice 2 oranges Apricots cooked 6 halves Sugar, 1 teaspoon
	Cereal	Rolled oats 1 sauce dish	Shredded wheat 1 biscuit
	Cream heavy	Cream heavy, 6 tablespoons	Cream heavy, 6 tablespoons
	Sugar	Sugar 2 teaspoons	Sugar 2 teaspoons
	Bread	Bread 1 slice	Muffin, 1
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Jelly	Jelly, 2 heaping tablespoons	Jelly 1 heaping tablespoon
	Beverage	Coffee	Coffee
	Cream	Cream heavy 2 tablespoons	Cream, heavy, 2 tablespoons
	Sugar	Sugar 2 teaspoons	Sugar 2 teaspoons
Noon	Cereal or potato Cheese egg or meat if none is used in evening meal	Creamed macaroni Macaroni ¼ cup Milk ⅓ cup Flour 1 tablespoon Butter 1 teaspoon	Egg in fluffy potato nest Egg yolk, 1 Egg white beaten 1 Potato, 1 large (combined with egg white) Butter 1 teaspoon
	Vegetables cooked or in salad	Tomato egg and lettuce salad Tomato 1 medium Lettuce 3 leaves Egg hard cooked 1 Mayonnaise 1 tablespoon	Stuffed tomato salad Tomato 1 medium Lettuce 3 leaves Celery chopped 2 tablespoons Mayonnaise 2 teaspoons
	Bread	Bread 1 slice	Roll 1
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Fruit	Baked apple with cream Apple 1 large Sugar 3 teaspoons Cream 4 tablespoons	Apple porcupine with whipped cream Apple 1 large Sugar 3 teaspoons Jelly or marmalade 1 tablespoon Nuts 4 halves almonds Cream 4 tablespoons
Night	Meat fish or poultry 1 very small serving if not used at noon	Roast beef	Creamed chicken and mushrooms in macaroni ring Macaroni ¼ cup Milk ⅓ cup Flour 1 tablespoon Butter 1 teaspoon Chicken diced ⅓ cup scant Mushrooms diced 2 tablespoons
	Potato or cereal	Baked potato 1 large Butter 1 teaspoon	
	Vegetables cooked or in salad	String beans buttered 1 sauce dish Carrots 1 sauce dish Butter 1 teaspoon	Carrots 1 sauce dish Butter 1 teaspoon Hearts of escarole French dressing 1 teaspoon
	Bread	Bread 1 slice	Roll 1
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Fruit	Banana and cream Banana 1 medium Cream, heavy, 4 tablespoons Sugar 1 teaspoon	Banana and cream Banana 1 medium Cream heavy 4 tablespoons Sugar, 1 teaspoon

NEPHRITIS

Typical Diet

(Nephrotic Type)

Average Body Weight 70 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	2 c	480	24	16	19	0 566	0 446	1	9??	250	1046	0 44	6
Cheese cottage	2 oz	60	2	12		0 050	0 158	0 6	106		168		
Egg	1	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry lean	8 oz	240		52	20	0 032	0 488	7 2		384	552	17 84	
Cream													
Butter	2 t	10			8	0 00?	0 00?		270				
Mayonnaise													
Fruit													
10 per cent—orange	2 m	200	22	2		0 048	0 036	0 8	450	220	100	0 44	108
15 per cent—apple	1 L	200	28	1	1	0 014	0 024	0 8	144	80	60	1	12
20 per cent—banana	1 m	100	23	1		0 008	0 0?8	0 6	350	50	75	0 61	10
Dried prunes	3 m	30	21 5	0 5		0 018	0 0?4	0 9	420	60	105		
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 0?3	0 009		1500	?3	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	200	38	4		0 0?2	0 114	2 6	60	200	80	2 36	0
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers													
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 1?6	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	22	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	9 t	45	45										
Jelly	9 t	60	45										
Desserts													
Cake angel	3½ arc		48	5		0 007	0 020	0 2		52	114	0 21	
Gelatin	½ T	3		2									
Beverages													
Totals of the Food Constituents			411 5	124 5	58	1 017	1 834	21 7	12 72?	210?	2954	27 03	212

Total Calories 2666

Below the normal

NEPHRITIS

Typical Diet
(Nephrotic Type)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange, 1	Orange juice, 1 orange
		Prunes 3 medium	Apricots cooked 6 halves
		Sugar 1 teaspoon	Sugar 1 teaspoon
	Cereal	Rolled oats 1 sauce dish	Shredded wheat, 1 biscuit
	Milk	Milk ½ cup	Milk, ½ cup
	Sugar	Sugar 1 teaspoon	Sugar, 1 teaspoon
	Eggs	Egg 1 soft boiled	Egg 1 poached
	Bread	Toast 1 slice	Muffin 1
	Butter	Butter 1 teaspoon	Butter ½ teaspoon
	Beverage	Coffee	Coffee
	Milk	Milk 2 tablespoons	Milk, 2 tablespoons
	Sugar	Sugar 2 teaspoons	Sugar, 2 teaspoons
Noon	Meat, fish or poultry	Cold meat	Cold sliced chicken
	Cereal or potato	Macaroni and tomatoes	Macaroni in tomato sauce
	Vegetables, cooked or in salad	Macaroni ¼ cup	Macaroni ¼ cup
		Tomato ½ cup	Tomato, ½ cup
		Flour 1 tablespoon	Flour 1 tablespoon
		Cottage cheese salad	Cottage cheese salad
		Cottage cheese 4 table spoons	Cottage cheese 4 table spoons
		Jelly 1 tablespoon	Jelly 1 tablespoon
		Lettuce 3 leaves	Lettuce 3 leaves
	Bread	Bread 1 slice	Roll 1
	Butter	Butter ½ teaspoon	Butter ½ teaspoon
	Fruit	Baked apple	Apple surprise
		Apple 1 large	Apple 1 large
		Sugar 3 teaspoons	Sugar 3 teaspoons
		Jelly 1 heaping tablespoon	Marmalade, 1 tablespoon
		Milk 1 glass	Milk, 1 glass
Night	Meat fish, or poultry	Roast beef	Planked sirloin steak
	Potato or cereal	Baked potato 1 large	Parsley potato balls
			Potato 1 large
			Butter ½ teaspoon
			Parsley chopped 1 tea spoon
	Vegetables cooked or in salad	String beans	Hearts of escarole
		Carrots steamed or raw	Carrots steamed or raw
	Bread	Bread 1 slice	Roll whole grain 1
	Butter	Butter ½ teaspoon	Butter ½ teaspoon
	Dessert	Fruit gelatin	Fruit gelatin
	Fruit gelatin or cake without fat	Orange juice 1 orange	Orange juice 1 orange
		Banana 1 medium	Banana 1 medium
		Sugar 2 teaspoons	Sugar 2 teaspoons
		Gelatin ¼ tablespoon	Gelatin ¼ tablespoon
		Cake angel 1 piece	Cake angel 1 piece
		Milk 1 small glass	Milk 1 small glass

PREGNANCY

Typical Diet

Average Body Weight, 60 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I.U.	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk	4 c	960	48	32	38	1 13	0 89?	2	1844	500	209?	0 88	12
Cheese	2 T	30	1	7	10	0 279	0 210	0 3	450	7	165	0 08	
Egg	One	50		7	5	0 027	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	3 oz	90		15	19 5	0 009	0 150	2 1		135	180	7 08	
Cream													
Butter	6 t	30			24	0 004	0 004		810				
Mayonnaise													
Fruit													
10 per cent—orange	1 m	100	11	1		0 024	0 018	0 4	225	110	50	0 2?	54
15 per cent—apple	1 m	150	21	1	1	0 011	0 018	0 6	108	60	45	0 75	9
20 per cent—banana	½ m	50	1?	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 023	0 009		1500	3	45		5
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato	1 L	200	38	4		0 0?2	0 114	2 6	60	200	80	2 38	*0
Bread white enriched	2 sl	60	3?	5	1	0 040	0 060	0 6		132	104	0 54	
whole wheat	? sl	60	30	6	1	0 030	0 090	1 2		192	108	1 24	
Flour	1 T	7	5	0 5		0 001	0 007	0 1		26	18	0 09	
Crackers													
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 126	1 5		219	65	0 40	
Macaroni cooked	¾ c	150	2?	4	0 5	0 006	0 044	0 4		15		0 11	
Sugar	6 t	30	30										
Jelly													
Desserts													
Cake	cu		26	2	4	0 018	0 032	0 3	154	62	69	0 20	
Gelatin	½ T	3		2									
Beverages													
Bouillon	1 c	240		6									
Totals of the Food Constituents			316	103	107	1 763	2 006	16 5	13 8?6	2031	3429	16 96	156

Total Calories 2639

* Below the normal

PREGNANCY

Typical Diet

Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit	Orange 1	Orange juice 1 orange
	Cereal	Rolled oats 1 sauce dish	Shredded wheat 1 biscuit
	Milk	Milk ½ cup	Milk 1 cup
	Sugar	Sugar 2 teaspoons	Sugar 2 teaspoons
	Egg	Egg soft cooked 1	Egg 1 poached on
	Bread	Toast 2 slices	Toast 2 slices
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Beverage	Coffee	Coffee
	Milk	Milk ¼ cup	Milk ¼ cup
	Sugar	Sugar 1 teaspoon	Sugar, 1 teaspoon
Noon	Main dish	Macaroni and cheese	Creamed chicken and mushrooms in macaroni ring
	Cereal or potato	Macaroni ¾ cup	Macaroni ¾ cup
	Cheese egg or milk	Cheese grated 4 tablespoons	Chicken diced ½ cup
			Mushrooms diced 2 tablespoons
		Milk ½ cup	Milk ½ cup
		Flour 1 tablespoon	Flour 1 tablespoon
		Butter 1 teaspoon	Butter 1 teaspoon
	Vegetables cooked or in salad	Tomato salad	Stuffed tomato salad
		Tomato 1 medium	Tomato 1 medium
		Lettuce 3 leaves	Lettuce 3 leaves
			Celery 2 tablespoons
	Mineral oil dressing		
	Bread	Bread 1 slice	Roll 1
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Dessert	Baked apple 1 medium	Apple snow
	Fruit pudding or cake	Sugar 1 teaspoon	Apple 2 tablespoons
		Milk ¼ cup	Egg white ½
		Milk 1 glass	Sugar 1 teaspoon
			Milk 1 glass
Night	Soup	Bouillon	Consomme
	Crackers		
	Meat fish and poultry lean	Roast beef	Planked sirloin steak
	Potato or cereal	Baked potato 1 large	Parsley potato balls
			Potato 1 large
			Parsley chopped 1 teaspoon
		Butter 1 teaspoon	Butter 1 teaspoon
	Vegetables cooked or in salad	String beans buttered	Carrots buttered
		Carrots buttered	Butter 1 teaspoon
		Butter for vegetables 1 teaspoon	Hearts of escarole
			Roquefort cheese dressing 1 tablespoon
	Bread	Bread 1 slice	Roll 1
	Butter	Butter 1 teaspoon	Butter 1 teaspoon
	Dessert	Fruit gelatin	Orange ice 2 heaping tablespoons
	Fruit cake pudding pastry or gelatin	Banana, ½ medium	Fruit juice 2 tablespoons
		Gelatin ¼ tablespoon	Sugar 2 teaspoons
		Sugar 2 teaspoons	Cup cake 1 plain
		Cake 1 piece plain	
Between night meal and bed time	Milk, 1 glass	Milk 1 glass	Milk 1 glass

PREGNANCY

Typical Diet (Low Caloric)

Average Body Weight, 60 Kgm

Food	Household Measure	Grams	Grams					Milligrams	I U	Micrograms		Milligrams	
			Carbohydrate	Protein	Fat	Calcium	Phosphorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Milk skim	4 c	960	48	32	4	1 172	0 920	2 8	96	43?	19?0	0 88	12
Cheese	2 T	30	1	7	10	0 79	0 210	0 3	450	7	165	0 06	
Egg	One	50		7	5	0 0?	0 112	1 5	500	75	125	0 03	
Meat fish or poultry	3 oz	90		15	19 5	0 009	0 150	2 1		135	180	7 08	
Cream													
Butter	6 t	30			?4	0 004	0 004		810				
Mayonnaise													
Fruit													
10 per cent—orange	1 m	100	11	1		0 024	0 018	0 4	2?5	110	50	0 2?	54
15 per cent—apple	1 sm	100	14	0 5	0 5	0 007	0 012	0 4	7?	40	30	0 50	6
?0 per cent—banana	½ m	50	12	0 5		0 004	0 014	0 3	175	25	38	0 31	5
Vegetables													
5 per cent—tomato	1 m	100	4	1	0 5	0 007	0 021	0 6	1000	75	45	0 58	22
5 per cent—string beans	1 s d	100	7 5	2 5		0 065	0 044	1 4	1000	75	110	0 64	25
5 per cent—lettuce	3 lvs	30	1	0 5		0 0 3	0 009		1500	23	45		5
5 per cent—cabbage	5 r T	100	5 5	1 5		0 046	0 034	0 4	55	105	100	0 29	70
10 per cent—carrots	1 s d	100	9 5	1	0 5	0 045	0 041	0 6	6000	100	90	1 47	4
Potato													
Bread white enriched	3 sl	90	48	7 5	1 5	0 060	0 090	0 9		198	156	0 81	
Flour													
Crackers													
Cereals													
Oats rolled cooked	1 s d	180	18	5	2	0 016	0 126	1 5		219	65	0 40	
Sugar													
Jelly													
Desserts													
Gelatin	¼ T	3		2									
Beverages													
Bouillon	1 c	240		6									
Totals of the Food Constituents			179 5	90	67 5	1 738	1 805	13 2	11 883	1619	3119	13 27	?03

Total Calories 1686

Below the normal

PREGNANCY

Typical Diet
(Low Caloric)
Meals for the Day

	Meal Plan	Moderate Cost Menu	Liberal Cost Menu
Morning	Fruit Cereal Milk, skim No sugar Egg Bread Butter Beverage Milk No sugar	Orange, 1 Rolled oats 1 sauce dish Milk skim ½ cup Egg soft cooked 1 Bread 1 slice Butter 2 teaspoons Coffee Milk skim, 4 tablespoons	Orange juice 1 orange Shredded wheat 1 biscuit Milk, skim, ½ cup Egg poached 1 on Toast 1 slice Butter, 2 teaspoons Coffee Milk, skim, 4 tablespoons
Noon	Cheese egg or milk Vegetables cooked or in salad Mineral oil dressing Bread Butter Fruit No sugar Milk, skim	Cheese, American 1 serving Cabbage buttered Butter 1 teaspoon Tomato and lettuce salad Tomato 1 medium Lettuce 3 leaves Mineral oil dressing Bread 1 slice Butter 1 teaspoon Baked apple Apple 1 small No sugar Milk skim, 1½ glasses	Steamed cabbage with cheese Cabbage 5 rounded table spoons Cheese, grated 4 table spoons Butter, 1 teaspoon Stuffed tomato salad Tomato 1 medium Lettuce 3 leaves Celery chopped, 2 table spoons Mineral oil dressing Roll 1 Butter 1 teaspoon Apple rings Apple 1 small No sugar Milk skim 1½ glasses
Night	Soup Crackers Meat fish or poultry lean Vegetables cooked or in salad Mineral oil dressing Bread Butter Fruit or gelatin desserts No sugar Milk skim	Bouillon Roast beef String beans buttered Carrots, buttered Butter 1 teaspoon Bread 1 slice Butter 1 teaspoon Fruit gelatin Banana ½ medium Gelatin ¼ tablespoon Saccharine Milk skim 1 glass	Consomme Planked sirloin steak Hearts of escarole Salad dressing Carrots buttered Butter 1 teaspoon Roll 1 Butter 1 teaspoon Molded fruit gelatin Banana, ½ medium Gelatin ¼ tablespoon Scacharine Milk skim 1 glass
Between night meal and bed time	Milk skim	Milk skim 1 glass	Milk skim 1 glass

SUMMARY IN TERMS OF THE KIND AND AM
NORMAL DIET AND THE VARIAT

A tabulation in which the foods of the norm
down the page Across the page is recorded
foods for each disease reviewed in the dietar

Summa

Foods	Normal Adult	Constipation, Spastic	Colitis	Ulcer Ambulatory No 1	Ulcer Ambulatory No 2	Under weight	Obesity	Diabetes, Normal Fat	Diabetes High Normal Fat
	grams								
Milk	480	N	+480	+480	+480	+240	N	N	N
Cheese	30	N	N	N	N	N	−15	N	N
Egg	50	N	+50	+100	N	N	N	N	N
Meat fish or poultry	120	Fish or poultry	⊖	⊖	Fish or poultry	N	Lean	N	N
Cream light	120	N	N	+120	+120	+120	⊖	−60	N
Butter	30	+30	+30	+30	+30	+45	−15	−15	N
Mayonnaise	15	⊖	⊖	⊖	⊖	+15	⊖	⊖	+15
Fruit 10%	100	Str +100	⊖	Str +100	Str +100	N	N	N	N
15%	150	⊖	⊖	⊖	Str −50	N	−50	−75	−75
20%	50	Str +150	⊖	⊖	N	N	N	N	⊖
Vegetables 5%	230	Str −30	⊖	⊖	Str −130	N	+100	N	N
10%	100	Str	⊖	⊖	Str +100	N	N	N	N
Potato	00	N	N	⊖	N	N	−100	−100	⊖
Bread	150	White	White +30	White +30	White	N	−60	−60	−120
Flour	7	N	N	N	N	N	−5	−5	−5
Crackers	8	⊖	+28	+16	+16	+20 wh grain	⊖	⊖	⊖
Cereal Oats rolled ck	180	Str	⊖	⊖	Str	N	⊖	⊖	⊖
Macaroni ck	150	N	N	N	N	N	−75	−75	−75
			Cr of Wheat 175	Cr of Wheat 175					
Sugar	45	−15	−20	−30	−30	N	⊖	⊖	⊖
Jelly	40	−20	⊖	⊖	⊖	N	⊖	⊖	⊖
Desserts Cake	1 s	N	N	1 sm s	1 sm s	Frosted	⊖	⊖	⊖
Gelatin	3	N	⊖	⊖	N	N	N	N	N
Beverages Bouillon	240	⊖	⊖	⊖	⊖	N	N	N	N

Key N = same as normal diet ⊖ = elimination + = increase − = decrease

...TS IN GRAMS OF FOOD IN THE TYPICAL
... FOR ABNORMAL CONDITIONS

...t, stated in kinds and amounts are listed
...increase or decrease or the elimination of
...lines The variations stand forth clearly

...o 1

...d er ...sorder ...hronic	Liver Disorder Acut	Nephritis Acute	Nephrosis	Pregnancy Normal	Pregnancy Low Caloric	Normal Child	Diabetes Child	Ketogenic Diet Child	Foods
N	N	−360	N	+480	Skim +480	+480	+480	⊖	Milk
...ttage	⊖	⊖	Cottage +30	N	N	−15	−15	N	Cheese
N	N	N	N	N	N	N	N	N	Egg
...n +120	Lean	−60	Lean +120	−30	−30	−60	−60	−90	Meat fish or poultry
⊖	⊖	Heavy +120	⊖	⊖	⊖	⊖	⊖	Heavy +120	Cream light
−?0	−15	−15	−20	N	N	−15	−15	+30	Butter
⊖	⊖	N	⊖	⊖	⊖	−10	−10	⊖	Mayonnaise
								oil +20	
N	N	+100	+100	N	N	N	+100	N	Fruit 10%
N	N	+50	+50	N	−50	N	N	⊖	15%
+50	+50	+50	+50	N	N	N	+100	⊖	20%
		Prunes 30	Prunes 30						
N	N	N	N	N	+100	N	N	+170	Vegetable 5%
N	N	N	N	N	N	N	N	⊖	10%
N	N	N	N	N	⊖	−100	−100	⊖	Potato
N	N	−60	−60	−30	−60	−60	−60	⊖	Bread
N	N	N	N	N	⊖	N	−3	⊖	Flour
N	N	⊖	⊖	⊖	⊖	⊖	⊖	⊖	Crackers
N	N	N	N	N	N	N	N	⊖	Cereal Oats rolled etc
N	N	N	N	N	⊖	−75	−75	⊖	Macaroni etc
+15	+15	N	N	−15	⊖	−20	⊖	⊖	Sugar
+1?0	+120	+5	+ 0	⊖	⊖	−20	⊖	⊖	Jelly
N	N	⊖	Angel 1 sl	N	⊖	1 sm s	⊖	⊖	Desserts Cake
N	N	⊖	N	N	N	N	N	⊖	Gelatin
N	N	⊖	⊖	N	N	⊖	⊖	⊖	Beverages Bouillon

A SUMMARY OF THE AMOUNTS OF THE FOOD CONSTITUENTS IN THE TYPICAL NORMAL AND THERAPEUTIC DIETS

This summary lists the amounts of the food constituents and calories in each diet, for adult and child The conditions where modifications from the normal occur can be readily seen

Summary No 2

Diets	Grams			Calories	Grams		Milli grams	I U	Micro grams	Micro-grams	Milli grams	Milli grams
	Carbo-hydrate	Protein	Fat		Calcium	Phos phorus	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Adult												
Normal	365 5	99 5	131	3,039	1 336	1 749	17	14,350	1 936	2,705	19 15	150
Allergy	285	88	146	2,798	0 455*	1 343	22 5	14,483	1,847	1 428*	22 39	181
Constipation, spastic	361 5	91	142	3,088	1 345	1 724	16 5	13 994	1,951	2 718	18 22	199
Colitis	305 5	89	141	2 847	1 901	1 999	23 3	6 544	1,546*	3,186	5 33*	32*
Ulcer												
Ambulatory No 1	321	99 5	168	3,194	2 082	2 235	25 5	8 872	1,866	3,594	5 80*	140
Ambulatory No 2	363 5	111	186 5	3,577	1 973	2 252	16 6	18,119	2 174	3,881	17 64	178
Underweight	429	113 5	213 5	4 092	1 743	2 119	18 2	17 472	2,125	3,438	19 37	153
Obesity	168*	74 5	70*	1 600*	1 042	1 228*	12	12,109	1,374*	2,202*	16 02*	207
Diabetes												
Normal fat	162 5*	78 5	87	1,747*	1 189	1 344	11 7	12,969	1 282*	2,277*	15 64*	136
High normal fat	103 5*	73	132	1 894*	1 196	1 273*	9 8*	13 937	1,053*	2 215*	13 61*	121
Liver disorders												
Chronic	476	127	62*	2 970	0 988	1 815	21 4	11 872	2,114	2 764	27 80	155
Acute	475	95	58*	2,822	0 949	1 494	17 5	12,224	1,922	2,404*	18 88	155
Nephritis												
Low protein	352	59 5*	156	3 050	0 705*	1 092*	14 9	17,899	1,645*	1,802	13 37*	207
Nephrotic type	411 5	124 5	58*	2,666	1 017	1 834	21 7	12,722	2,102	2 954	27 03	212
Pregnancy												
Normal	316	103	107	2,639	1 763	2 006	16 5	13 826	2 031	3,429	16 96*	156
Low caloric	179 5*	90	67 5*	1 686*	1 788	1 805*	13 2*	11,883	1 619*	3,119	13 27*	203
Child												
Normal	275	80 5	85 5	2,192	1 592	1 704	13 2	13,138	1,736	3,177	12 32	146
Allergy	257	60	117 5	2 326	0 428*	1 060*	13 4	14,483	1,574	1,212*	14 65	181
Diabetes	248	80 5	82 5	2 057	1 610	1 723	14	13 597	1,836	3 242	12 97	210
Ketogenic diet	40*	34*	182	1 934*	0 668*	0 689*	6 2*	10 354	639*	1 036*	4 68*	186

* Below the normal

Summary No 3

"A SUMMARY IN TERMS OF THE MENU FOR THE TYPICAL NORMAL DIET AND THE VARIATIONS FOR ABNORMAL CONDITIONS"

This summary lists in the form of menus, the foods in the several diets, demonstrating how very nearly they come to the foods in the normal or family diet Thus a person, or persons on a therapeutic diet rarely need to have separately prepared meals and this lessens the anxiety and burden of the homemaker For example, in the breakfast, there is hardly any deviation For lunch, macaroni, as typical of a cereal product and of racial custom, can be used in all the diets This is true of such other foods as milk Reference can be made to the preceding diets for the amounts of foods needed in these menus

A SUMMARY IN TERMS OF THE MENUS FOR THE TYI

	Normal Adult	Constipation Spastic	Colitis	Ulcer Ambulatory No 1	Ulcer Ambulatory No .	Under weight	Obesity	Dial Norm
Morning Meal	Orange	Orange juice str		Orange juice str	Orange juice str	Orange	Orange	Orang
	Rolled oats Milk Sugar	Rolled oats str Cream Sugar	Cream of wheat Milk Cream Sugar	Cream of wheat Milk Cream Sugar	Rolled oats str Milk Cre..m Sugar	Rolled oats Cream Sugar		
	Egg	Egg			Egg	Egg	Egg	Egg
	Toast Butter Jelly	Toast white Butter Jelly	Toast white Butter	Toast white Butter	Toast white Butter	Toast Butter Jelly	Toast Butter	Toast Bu
	Coffee Cream Sugar	Milk			Milk	Coffee Cream Sugar	Coffee Milk Without sugar	Coffee Crea With su
Mid morning			Milk Crackers Butter	Milk Cream Crackers Butter	Milk Cream Crackers	Milk Crackers wh wheat Butter		
Noon Meal	*Macaroni* and cheese	*Macaroni* and cheese	*Macaroni* and cheese	Macaroni and cheese	Macaroni and cheese	Macaroni and cheese	Macaroni and cheese	Macar and
	Tomato salad Mayonnaise	Tomato juice			Tomato juice	Tomato salad Mayonnaise	Tomato salad Mineral oil dressing	Tomat salac Miner dres
							Cabbage	
	Bread Butter	Bread white Butter	Bread white Butter	Toast white Butter	Bread white Butter	Bread Butter	Bread Butter	Bread
	Baked apple Cream	Apple sauce	Custard	Custard	Apple sauce	Baked apple Cream	Baked apple Without sugar	Baked With sug Milk
	Milk	Milk		Milk	Milk	Milk	Milk	Milk
Mid afternoon			Cornstarch pudding with Cream Crackers	Milk Cream Crackers Butter	Milk Cream Crackers	Milk Wh wheat crackers		
Night Meal	Bouillon Crackers					Bouillon Crackers	Bouillon Without crackers	Bouillo With cra
	Roast beef	Baked haddock	Egg poached	Eggs soft cooked	Baked fish	Roast beef	Roast beef	Roast l
	Baked potato Butter	Baked potato Butter	Baked potato Butter	Potato mashed	Baked potato Butter	Baked potato Butter	Baked potato	Baked tato Butt
	String beans buttered	String beans str buttered			String beans str buttered	String beans buttered	String beans	String l butte
	Carrots buttered	Carrots str buttered			Carrots str buttered	Carrots buttered	Carrots	Carrots butte
	Bread Butter	Bread white Butter	Bread white Butter	Toast white Butter	Bread white Butter	Bread Butter	Bread Butter	Bread Butte
	Fruit gelatin Cream	Fruit gelatin Cream			Banana gelatin	Fruit gelatin Cream	Fruit gelatin Milk	Fruit ge Witho sug
	Cake plain	Cake plain	Cake plain	Cake plain	Cake plain	Cake frosted		
	Coffee if desired		Milk			Coffee if desired	Coffee if desired	Coffee i desire
Between night meal and			Milk Crackers	Milk	Milk Cream Cracker	Milk		

AL DIET AND THE VARIATIONS FOR ABNORMAL CONDITIONS**

No 3

	Liver Disorder Chronic	Liver Disorder Acute	Nephritis	Nephrosis	Pregnancy Normal	Pregnancy Low Caloric	Normal Child	Diabetes Child	Ketogenic Diet Child
	Orange	Orange	Orange juice Prunes	Orange Prunes	Orange	Orange	Orange	Orange	Orange
	Rolled oats Sugar Milk	Rolled oats Sugar	Rolled oats Cream heavy Sugar	Rolled oats Milk Sugar	Rolled oats Milk Sugar	Rolled oat Milk skim Without sugar	Rolled oats Milk Sugar	Rolled oats Milk	
	Egg		(Egg for noon meal)	Egg	Egg	Egg	Egg	Egg	Egg
	Toast Butter Jelly	Toast Butter Jelly	Toast Butter Jelly	Toast Butter	Toast Butter	Toast Butter	Toast Butter Jelly	Toast Butter	Butter
	Milk	Milk	Coffee Cream heavy Sugar	Coffee Milk Sugar	Coffee Milk Sugar	Coffee Milk skim Without sugar	Milk	Milk	Cream heavy
we	Meat Macaroni and tomato	Macaroni and tomato	Creamed macaroni	Meat Macaroni and tomatoes	Macaroni and cheese	American cheese	Roast beef Baked potato	Roast beef Baked potato Butter	Roast beef
	Cottage cheese salad	Lettuce and egg salad	Tomato salad Mayonnaise Egg	Cottage cheese salad Jelly	Tomato salad	Tomato lettuce salad Mineral oil dressing	String beans buttered	String beans buttered	Lettuce French dressing or Mayonnaise
						Cabbage buttered	Carrots buttered	Carrots buttered	String beans buttered
	Bread Butter and jelly	Bread Jelly Butter	Bread Butter	Bread Butter	Bread Butter	Bread Butter	Bread Butter	Bread Butter	
ple	Baked apple	Baked apple	Baked apple Cream	Baked apple Jelly	Baked apple Sugar Milk	Baked apple Without sugar	Fruit gelatin Cake plain	Fruit gelatin	
	Milk	Milk		Milk	Milk	Milk skim	Milk		Cream
rs	Bouillon Crackers	Bouillon Crackers			Bouillon	Bouillon			
f	Roast beef lean	Roast beef lean	Roast beef	Roast beef	Roast beef	Roast beef			
	Baked potato Butter	Baked potato Butter	Baked potato Butter	Baked potato	Baked potato Butter		Macaroni and cheese	Macaroni and cheese	Cheese Cabbage buttered
s d	String beans buttered	String beans buttered	String beans buttered	String beans	String beans buttered	String beans buttered	Tomato salad Mayonnaise	Tomato salad Mayonnaise	Tomato salad French dressing
d	Carrots	Carrots	Carrots buttered	Carrots	Carrots buttered	Carrots buttered			
	Bread Butter and jelly	Bread Butter and jelly	Bread Butter	Bread Butter	Bread Butter	Bread Butter	Bread Butter	Bread Butter	
atin t	Fruit gelatin	Fruit gelatin	Banana Cream	Fruit gelatin	Fruit gelatin	Fruit gelatin Without sugar	Baked apple	Baked apple	
	Cake plain	Cake plain		Angel Cake	Cake plain				
l				Milk		Milk skim	Milk	Milk	
					Milk	Milk skim			

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